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Site Name BURLINGTON INDUSTRIES

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RptSegment 1

DocDate 12/3/1992

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Box SF2232

AccessLevel PUBLIC

Division WASTE MANAGEMENT

Section SUPERFUND

Program IHS (IHS)

DocCat FACILITY



**AQUATERRA**

*Environmental Consultants*

OLD PERMIT # 46-0064-WM-0060  
NO NEED TO ISSUE NEW PERMIT  
CALLED TO INFORM - 12/7/92

**RECEIVED**  
DEC 4 1992

ENV. MANAGEMENT  
FAYETTEVILLE REG. OFFICE

December 3, 1992

Ms. Cindy Hegg  
North Carolina Department of Environment, Health,  
and Natural Resources  
Division of Environmental Management  
Wachovia Building Suite 714  
Fayetteville, North Carolina 28301

Reference: Application for Permit to Construct a Monitoring Well  
Burlington Industries, Inc.  
Raeford, North Carolina  
Aquaterra Job No. 467

Dear Ms. Hegg:

Aquaterra, Inc. is pleased to submit on behalf of Burlington Industries, Inc., the enclosed application for a permit to construct a monitoring well. The well is to be constructed to replace the damaged well MW-5s.

If you have any questions or comments concerning the application, please contact Ms. Sharon A. Myers at (919) 859-9987.

Sincerely,

Sharon A. Myers  
Project Manager

Senior Peer Review By:

David L. Duncklee, P.G.  
Senior Project Manager

Enclosure

L3011-92/SAM/cbb

Corporate Office

P. O. Box 50328  
Raleigh, NC 27650  
(919) 859-9987  
FAX (919) 859-9930

Charlotte Office

P. O. Box 668107  
Charlotte, NC 28266-8107  
(704) 525-8680  
FAX (704) 527-2792

Greensboro Office

P. O. Box 16241  
Greensboro, NC 27416-0241  
(919) 273-5003  
FAX (919) 271-8138

NORTH CAROLINA  
ENVIRONMENTAL MANAGEMENT COMMISSION  
DEPARTMENT OF ENVIRONMENT, HEALTH, & NATURAL RESOURCES  
**APPLICATION FOR PERMIT TO CONSTRUCT A MONITORING WELL SYSTEM** 1992

**RECEIVED**

Date: December 2, 19 92 County Hoke

ENV. MANAGEMENT  
FAYETTEVILLE REG. OFFICE

In accordance with the provisions of Article 7, Chapter 87, General Statutes of North Carolina and regulations pursuant thereto, application is hereby made for a permit to monitoring wells.

1. Name of Applicant: Burlington Industries, Inc. (Telephone: 804-374-8111)  
Applicant's Mailing Address: P.O. Box 788, Clarksville, Virginia 23927
2. Name of Property Owner (if different from applicant) \_\_\_\_\_  
Owner's Mailing Address: \_\_\_\_\_  
Mike Garlic, Burlington Industries, Inc. 804-374-8111
3. Contact Person: Sharon Myers, Aquaterra, Inc. (Telephone: 919-859-9987)
4. Location of Property: Highways 211 & 401 Bypass, Raeford, North Carolina
5. Reason for Monitoring Well(s): Environmental Assessment  
(ex: nondischarge permit requirements, suspected contamination, environmental assessment, etc.)
6. Type of facility or site for which the monitoring well(s) is needed: dye pond  
(ex: nondischarge facility, waste disposal site, landfill, underground storage tank, etc.)
7. Type of contamination being monitored (if applicable): Organic Solvents  
(ex: nutrients, organics, heavy metals, etc.)
8. Are any existing recovery wells associated with the monitoring well(s)? No If yes, how many? \_\_\_\_\_  
Recovery Well Construction Permit No. \_\_\_\_\_
9. Distance to a known waste or pollution source: 100 feet
10. Are any water supply wells located less than 500 feet from the proposed monitoring wells? No  
If yes, give distance: \_\_\_\_\_ feet
11. Well Driller: Carolina Drillers
12. Registration #: 728
13. Driller's Address: Wilmington, NC 28404

**PROPOSED MONITORING WELL CONSTRUCTION INFORMATION**

1. Total Number of Wells to be constructed: 1 ; (A) Number to be completed in bedrock? 0  
(B) Number to be completed in unconsolidated material? 1
2. Estimated depth of well(s): 14 feet
3. Gravel or sand pack interval (if appropriate)  
From 3 feet To 14 feet
4. Type of casing used: PVC  
(ex: PVC, stainless steel, galvanized steel, etc.)
5. Diameter of casing: 2 inches

FOR OFFICE USE ONLY	
___	PERMITTED ACTIVITY
___	U.S.T. LEAK DETECTION
___	GROUNDWATER QUALITY STANDARDS
___	VIOLATIONS SUSPECTED FROM UNPERMITTED
___	ACTIVITIES
___	NOTICE OF NON-COMPLIANCE AT
___	UNPERMITTED FACILITIES
PERMIT NO. _____	ISSUED _____ 19 _____
INCIDENT # _____	



6. Thickness of casing: 0.19 inches
7. How will the well(s) be secured? water tight lockable cap and manhole cover
8. Estimated beginning construction date: December 16, 1992
9. Estimated completion date: December 17, 1992

### ADDITIONAL INFORMATION

1. ATTACH A SITE MAP SHOWING THE LOCATIONS OF THE FOLLOWING:
- 1 - PROPOSED MONITORING WELL(S)
  - 2 - ALL EXISTING MONITORING AND RECOVERY WELLS OR TEST BORINGS WITH THE PROPERTY BOUNDARY
  - 3 - ALL WATER SUPPLY WELLS WITHIN 500 FEET OF THE WASTE SOURCES
  - 4 - AT LEAST TWO REFERENCE POINTS (NUMBERED ROADS, INTERSECTIONS, STREAMS, ETC.)
2. PROVIDE A WELL CONSTRUCTION DIAGRAM OF EACH WELL SHOWING DIAMETER, ESTIMATED DEPTH, SCREEN INTERVALS, SAND/GRAVEL PACKS, TYPE OF CASING MATERIAL, CASING WALL THICKNESS, WELL HEAD COMPLETION DETAILS, ETC.)
- 

The Applicant hereby agrees the proposed well(s) will be constructed in accordance with approved specifications and conditions of the Well Construction Permit as regulated under the Well Construction Standards (Title 15A North Carolina Administrative Code, Subchapter 2C) and accepts full responsibility for compliance with these rules.

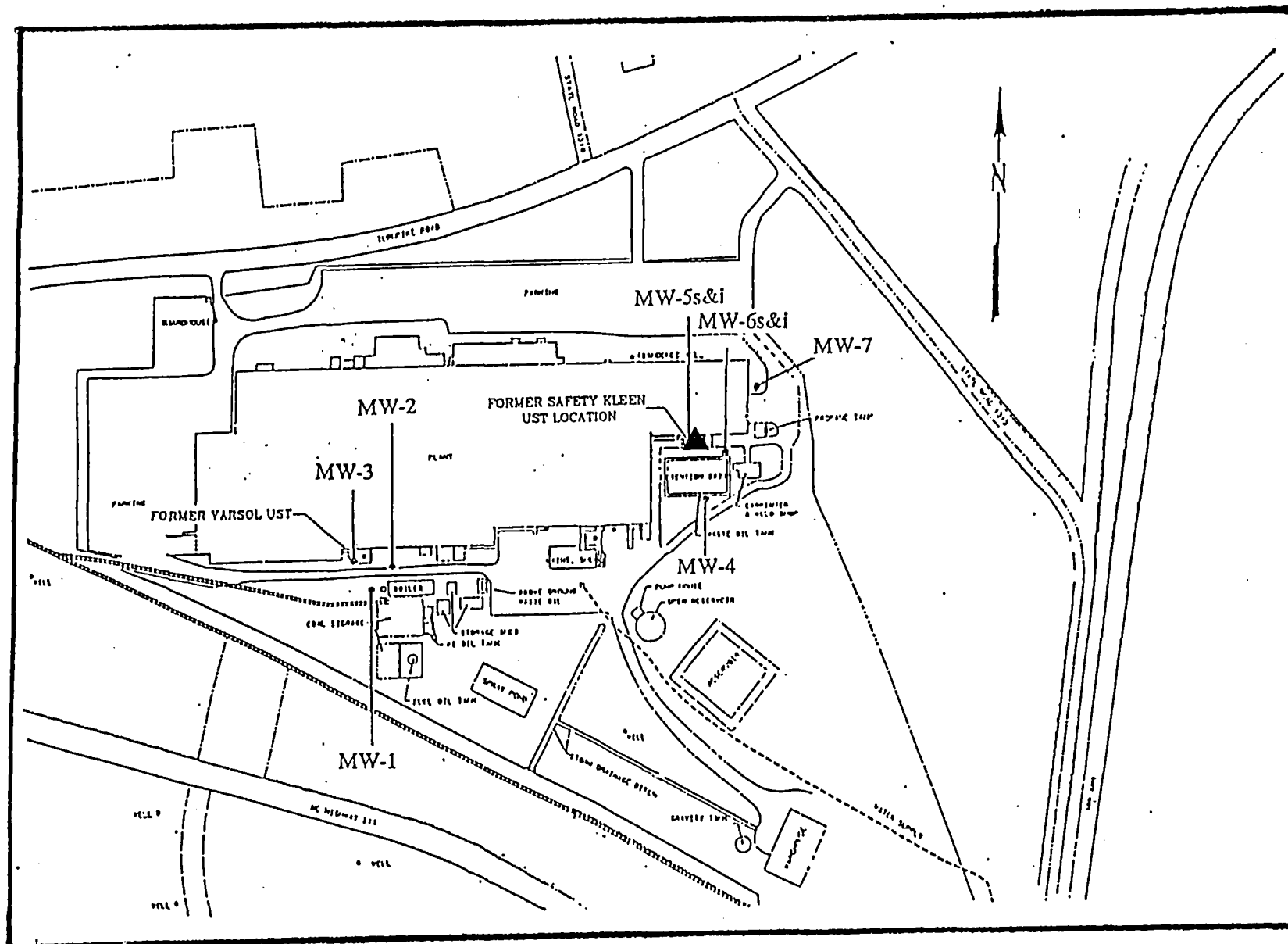
Sharon A. Myers  
Signature of Applicant or Agent

Project Manager, Aquaterra, Inc.  
Title (if applicable)

If the property is owned by someone other than the applicant, the property owner hereby consents to allow the applicant to construct monitoring wells as outlined in this application and that it shall be the responsibility of the applicant to ensure that these monitoring wells conform to the Well Construction Standards (Title 15A North Carolina Administrative Code, Subchapter 2C).

\_\_\_\_\_  
Signature of Property Owner (if different from applicant)





PROJECT:  
BURLINGTON INDUSTRIES  
RAEFORD, NORTH CAROLINA

TITLE:  
MONITOR WELL LOCATION MAP

JOB:  
467C

DRAWING:  
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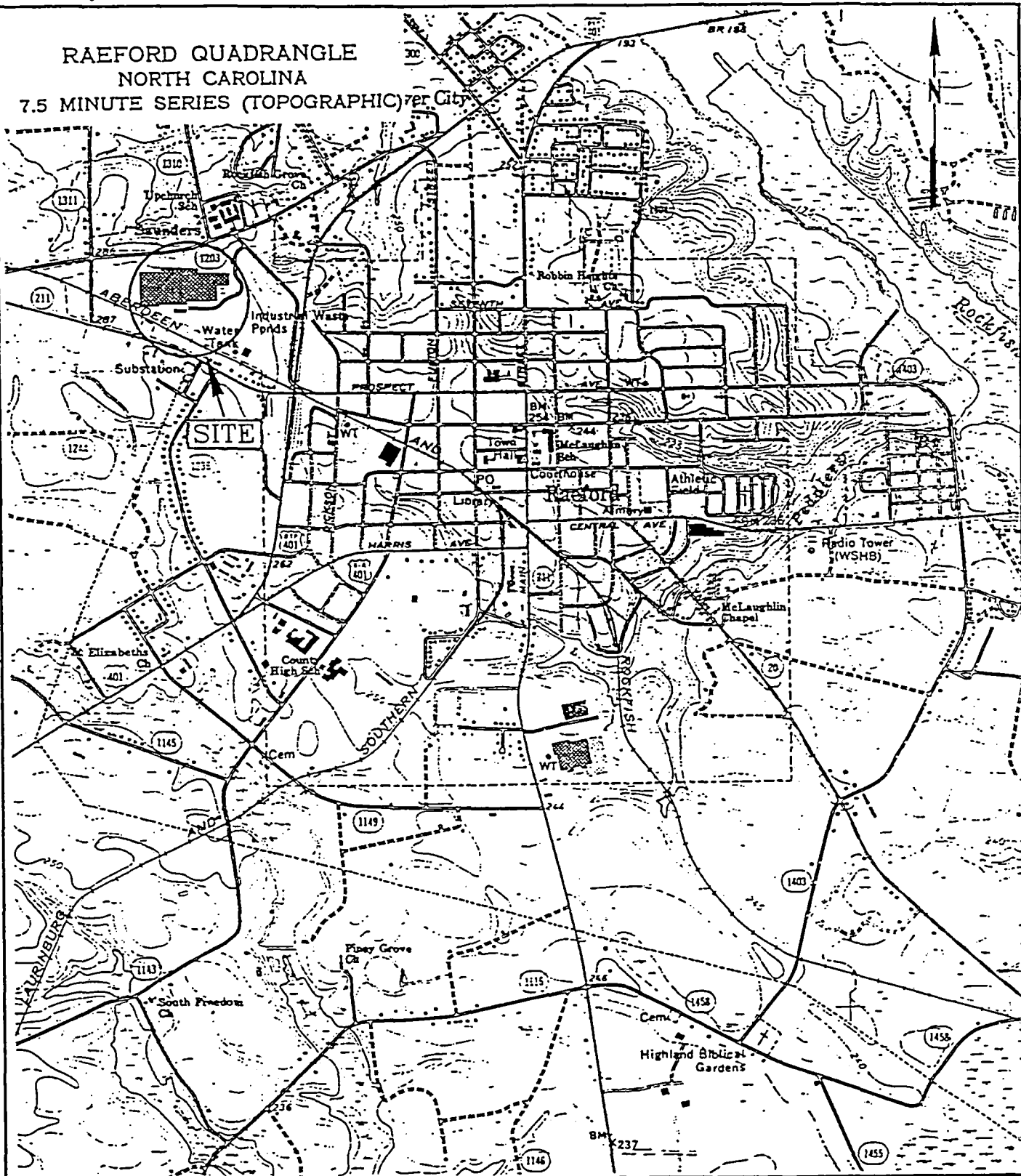
FIGURE:  
3

SCALE:  
1"=400'



AQUATERRA, INC.  
RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

RAEFORD QUADRANGLE  
NORTH CAROLINA  
7.5 MINUTE SERIES (TOPOGRAPHIC)

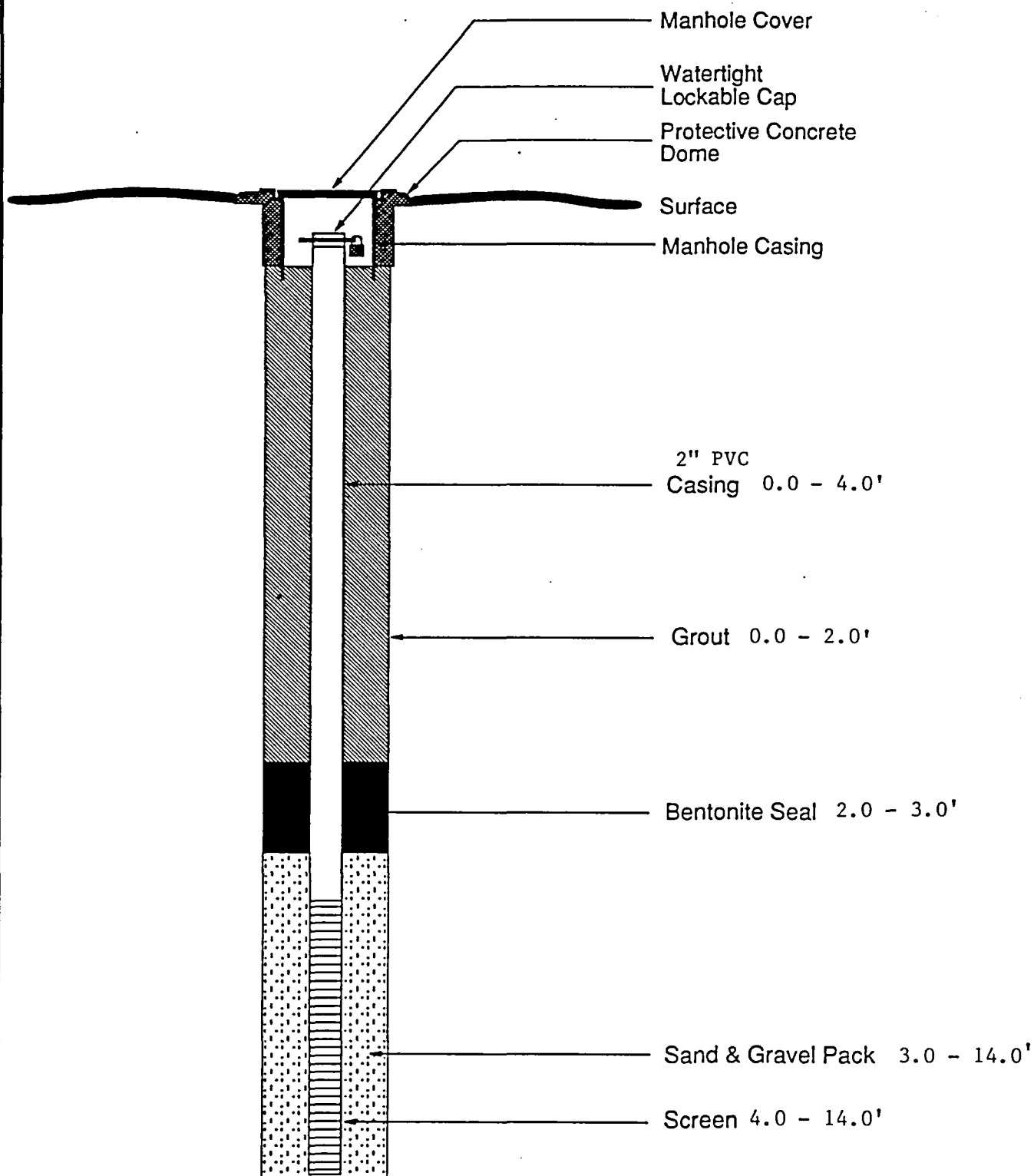


**AQUATERRA, INC.**  
RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

Author	Drawing	Layers	Date	Title	Site Location
RDG					
Job No.	Revision	Figure	Scale	Project	
C-467		1	1"=2000'	Burlington Industries Raeford, North Carolina	



Well is to replace MW-5s. Original MW-5s was damaged and will be abandoned.



Style 3

Standard Type II Belowgrade Monitoring  
Well Construction Schematic



AQUATERRA, INC.  
RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

FOR OFFICE USE ONLY  
QUAD. NO. \_\_\_\_\_ SERIAL NO. 137540  
Lat. \_\_\_\_\_ Long. \_\_\_\_\_ RO \_\_\_\_\_  
Minor Basin \_\_\_\_\_  
Basin Code \_\_\_\_\_  
Header Ent. \_\_\_\_\_ GW-1 Ent. \_\_\_\_\_

## WELL CONSTRUCTION RECORD

DRILLING CONTRACTOR: Groundwater Protection Inc.

DRILLER REGISTRATION NUMBER: 1105

STATE WELL CONSTRUCTION

PERMIT NUMBER: 460064-WR-0069 JUL 22 1992

ENV. MANAGEMENT  
FAYETTEVILLE REG. OFFICE

1. WELL LOCATION: (Show sketch of the location below)

Nearest Town: Raeford, NC County: Hoke

(Road, Community, or Subdivision and Lot No.)

2. OWNER Burlington Industries  
ADDRESS Exec. Offices, P.O. Box 788

Clarksville VA 23927  
City or Town State Zip Code

3. DATE DRILLED 7-9-92 USE OF WELL Recovery

4. TOTAL DEPTH 35.0 ft.

5. CUTTINGS COLLECTED YES ☐ NO ☒

6. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒

7. STATIC WATER LEVEL Below Top of Casing: \_\_\_\_\_ FT.

(Use "+" if Above Top of Casing)

8. TOP OF CASING IS 0.0 FT. Above Land Surface\*

\* Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C .0118

9. YIELD (gpm): NA METHOD OF TEST NA

10. WATER ZONES (depth): NA

11. CHLORINATION: Type NA Amount NA

12. CASING:

From	Depth	To	Diameter	Wall Thickness or Weight/Ft.	Material
0.0	5.0	Ft.	2.0"	Sch. 40	PVC
From	To	Ft.			
From	To	Ft.			

13. GROUT:

From	Depth	To	Material	Method
1.5	2.0	Ft.	Portland Cement	Pour
From	To	Ft.		

14. SCREEN:

From	Depth	To	Diameter	Slot Size	Material
5.0	35.0	Ft.	2.0	in. .010	PVC
From	To	Ft.			
From	To	Ft.			

15. SAND/GRAVEL PACK:

From	Depth	To	Size	Material
3.0	35.0	Ft.	20-60	Fine Silica Sand
From	To	Ft.		

16. REMARKS: RW-1, Bentonite pellets from 2.0 to 3.0 ft.

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT

Submit original to Division of Environmental Management and copy to well owner.

DATE



## WELL CONSTRUCTION RECORD

FOR OFFICE USE ONLY

Quad. No. \_\_\_\_\_ Serial No. 118599  
Lat. \_\_\_\_\_ Long. \_\_\_\_\_ Pc \_\_\_\_\_  
Minor Basin \_\_\_\_\_  
Basin Code \_\_\_\_\_  
Header Ent. \_\_\_\_\_ GW-1 Ent. \_\_\_\_\_

DILLING CONTRACTOR Carolina Drilling  
DILLER REGISTRATION NUMBER 728

STATE WELL CONSTRUCTION  
PERMIT NUMBER: 46-0064-WM-0060

WELL LOCATION: (Show sketch of the location below)

MW-1

Nearest Town: Raeford  
State Highways 401 and 211  
Road, Community, or Subdivision and Lot No.)

OWNER Burlington Industries  
ADDRESS Post Office Box 788  
(Street or Route No.)  
Clarksville VA 23927  
City or Town State Zip Code

DATE DRILLED 11-7-90 USE OF WELL Monitoring

TOTAL DEPTH 18.0 CUTTINGS COLLECTED ☒ Yes ☐ No

DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

STATIC WATER LEVEL: 5.10 FT. ☐ above TOP OF CASING,  
☐ below  
TOP OF CASING IS 0 FT. ABOVE LAND SURFACE.

YIELD (gpm): N/A METHOD OF TEST N/A

WATER ZONES (depth): N/A

CHLORINATION: Type None Amount \_\_\_\_\_

### CASING:

Depth	Diameter	Wall Thickness or Weight/Ft.	Material
From <u>Surface</u> To <u>3.0</u> Ft.	<u>2"</u>	<u>Sch. 40</u>	<u>PVC</u>
From _____ To _____ Ft.	_____	_____	_____
From _____ To _____ Ft.	_____	_____	_____

### GROUT:

Depth	Material	Method
From <u>Surface</u> To <u>1.5</u> Ft.	<u>Portland #1</u>	<u>Pour</u>
From _____ To _____ Ft.	_____	_____

### SCREEN:

Depth	Diameter	Slot Size	Material
From <u>3.0</u> To <u>13.0</u> Ft.	<u>2</u> in.	<u>0.010</u> in.	<u>PVC</u>
From _____ To _____ Ft.	_____ in.	_____ in.	_____
From _____ To _____ Ft.	_____ in.	_____ in.	_____

### GRAVEL PACK:

Depth	Size	Material
From <u>2.5</u> To <u>18.0</u> Ft.	<u>Coarse</u>	<u>Sand</u>
From _____ To _____ Ft.	_____	_____

REMARKS: Well point length = 0.25'

County: Hoke

Depth  
From \_\_\_\_\_ To \_\_\_\_\_

DRILLING LOG  
Formation Description

See Attachment A

RECEIVED  
FEB 6 1991

ENV. MANAGEMENT  
FAYETTEVILLE REG. OFFICE

If additional space is needed use back of form.

### LOCATION SKETCH

(Show direction and distance from at least two State Roads, or other map reference points)

See Attachment B

RECEIVED  
FEB 1 1991  
GROUNDWATER SECTION  
RALEIGH, NC

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT

DATE

2/1/91



AQUATERRA, INC.

ATTACHMENT A

MW-1

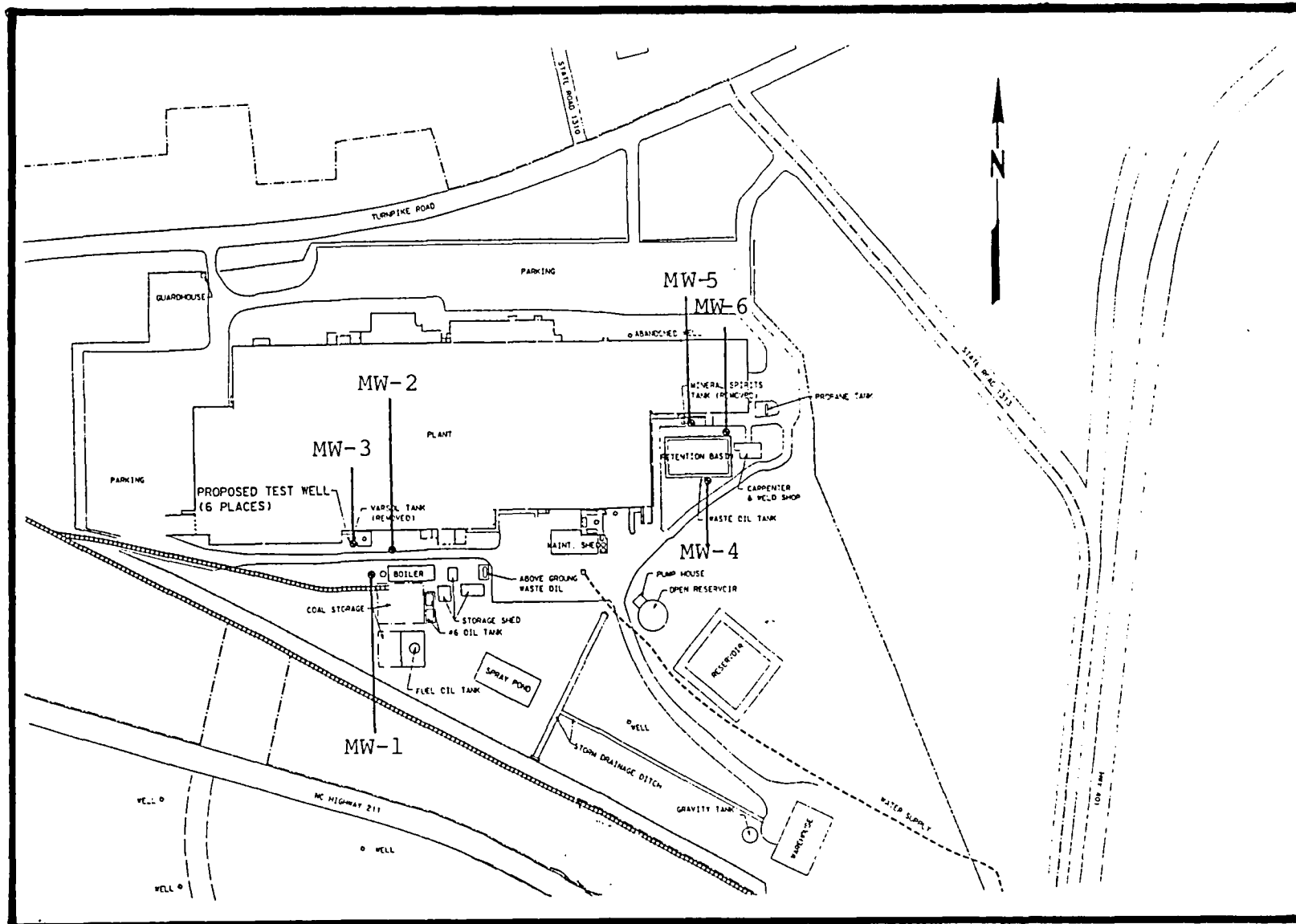
## Subsurface Drill Log

Depth (Feet)	SOIL/MATERIAL DESCRIPTION	Surface Elevation	SAMPLES	OVA Results (ppm)		Remarks
				SPT. SPOON	CUTTINGS	
	A. See Below					No solvent odor
	Brick red silty clay (ML)					
5	Light brown to tan silty clay (ML)		BDL			No solvent odor spoon 3.5'-5.0' Blows 3-4-5
10	Light gray to cream white sandy silty clay (CL)		BDL			No solvent odor Spoon 9.0'-10.5' Blows 3-1-1 Wet soil cuttings @ approximately 10.0' below grade
15						
20	Boring terminated @ 18.0' below grade in light gray to cream white sandy silty clay (CL)					
25						
	A. Grass, grass roots, dark brown sandy clayey silt (OL)					
	BDL-Below OVA detection limit of 0.01 ppm total volatilized organic compounds					

Drilling &amp; Sampling Meets ASTM D-1586 &amp; ASTM D-1587

Page 1 of 1Supervisor Steven M. BurrowsLocation BI - Raeford, NCRig Type Hollow Stem AugerDate Drilled 11-7-90Weather SunnyJob Number 467C





ATTACHMENT B

PROJECT:

BURLINGTON INDUSTRIES  
RAEFORD, NORTH CAROLINA

TITLE:

MONITOR WELL LOCATION MAP

JOB: 467C

DRAWING: ----

FIGURE: --

SCALE:  
1"=400'



AQUATERRA, INC.  
RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

# WELL CONSTRUCTION RECORD

STATE WELL CONSTRUCTION  
PERMIT NUMBER: 46-0064-WM-0060

MW-2

County: Hoke

Depth

From \_\_\_\_\_ To \_\_\_\_\_

DRILLING LOG  
Formation Description

See Attachment A

DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

YIELD (gpm): N/A METHOD OF TEST N/A

WATER ZONES (depth): N/A

CHLORINATION: Type None Amount           

CASING:

Depth	Diameter	Wall Thickness or Weight/Ft.	Material
From <u>Surface</u> To <u>3.65</u> Ft.	<u>2"</u>	<u>Sch. 40</u>	<u>PVC</u>
From _____ To _____ Ft.	_____	( <u>0.19"</u> )	_____
From _____ To _____ Ft.	_____	_____	_____

If additional space is needed use back of form.

GROUT:

Depth		Material	Method
From	Surface To 1.5 Ft.	Portland #1	Pour
From	To	Ft.	

See Attachment B

SCREEN:

Depth Diameter Slot Size Material  
From 3.65 To 13.65 Ft. 2 in. 0.010 in. PVC  
From \_\_\_\_\_ To \_\_\_\_\_ Ft. \_\_\_\_\_ in. \_\_\_\_\_ in. \_\_\_\_\_  
From \_\_\_\_\_ To \_\_\_\_\_ Ft. \_\_\_\_\_ in. \_\_\_\_\_ in. \_\_\_\_\_

GRAVEL PACK:

Depth		Size	Material
From <u>2.40</u>	To <u>1.50</u>	Fl. <u>Coarse</u>	<u>Sand</u>
From	To	Fl.	

REMARKS: Well point length = 0.10'

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT

DATE \_\_\_\_\_

Submit original to Division of Environmental Measurement and copy to well owner.



AQUATERRA, INC.

MW-2

ATTACHMENT A

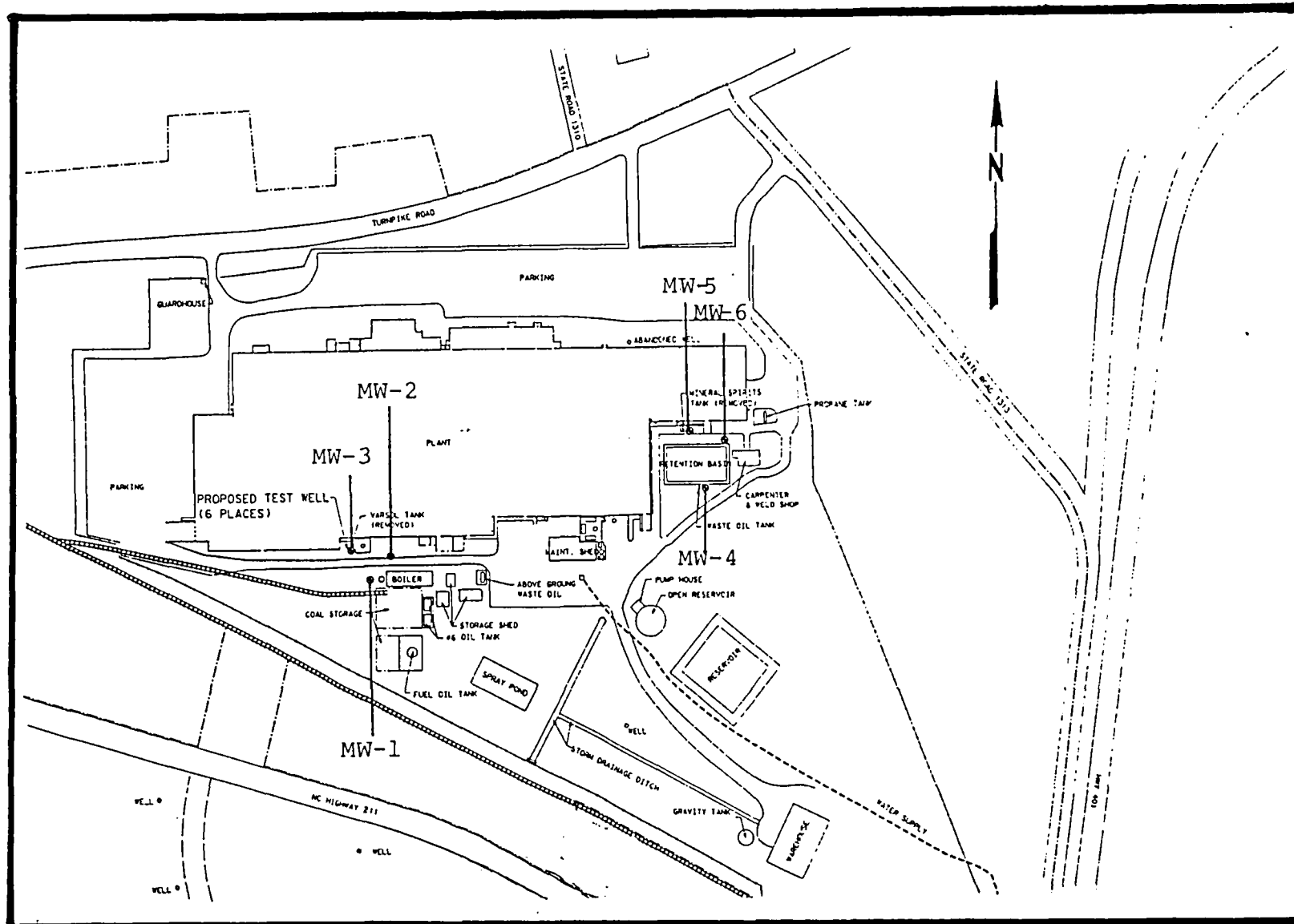
## Subsurface Drill Log

Depth (Feet)	SOIL/MATERIAL DESCRIPTION	Surface Elevation	SAMPLES	OVA Results (ppm)		Remarks
				SPT. SPOON	CUTTINGS	
	A. See Below					
	Black silty clay (CL)					no solvent odor
	Brick red silty clay (ML)					
					BDL	no solvent odor
5	Medium brown silty clay (ML)					no solvent odor
						damp soil cuttings @ approximately 6.0' below grade
10	Flesh to tan and cream white to light brown silty sandy clay (CL)					no solvent odor wet soil cuttings @ approximately 10.0' below grade
15	Boring terminated @ 15.0' below grade in flesh to tan and cream white to light brown silty, sandy clay (CL)					
20						
25						
	A. Grass and grass roots, dark brown to black sandy, clayey silt (OL) BDL-Below OVA detection limit of 0.01 ppm total volatilized organic compounds					

Drilling &amp; Sampling Meets ASTM D-1586 &amp; ASTM D-1587

Page 1 of 1Supervisor Steven M. BurrowsLocation BI - Raeford, NCRig Type Hollow Stem AugerDate Drilled 11-7-90Weather SunnyJob Number 467C





ATTACHMENT B

PROJECT:

BURLINGTON INDUSTRIES  
RAEFORD, NORTH CAROLINA

TITLE:

MONITOR WELL LOCATION MAP

JOB:  
467C

DRAWING:  
----

FIGURE:  
--

SCALE:  
1"=400'



AQUATERRA, INC.

RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

FOR OFFICE USE ONLY

Quad. No. \_\_\_\_\_ Serial No. 118601  
Lat. \_\_\_\_\_ Long. \_\_\_\_\_ Pc \_\_\_\_\_  
Minor Basin \_\_\_\_\_  
Basin Code \_\_\_\_\_  
Header Ent. \_\_\_\_\_ GW-1 Ent. \_\_\_\_\_

## WELL CONSTRUCTION RECORD

DILLING CONTRACTOR Carolina Drilling

DILLER REGISTRATION NUMBER 728

STATE WELL CONSTRUCTION  
PERMIT NUMBER: 46-0064-WM-0060

WELL LOCATION: (Show sketch of the location below)

MW-3

Nearest Town: Raeford

County: Hoke

State Highways 401 and 211

Road, Community, or Subdivision and Lot No.)

OWNER Burlington Industries

ADDRESS Post Office Box 788

Clarksville (Street or Route No.)

VA 23927

City or Town State Zip Code

DATE DRILLED 11-7-90 USE OF WELL Monitoring

TOTAL DEPTH 15.0' CUTTINGS COLLECTED ☒ Yes ☐ No

DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

STATIC WATER LEVEL: 6.47 FT. ☐ above TOP OF CASING,

TOP OF CASING IS 0 FT. ABOVE LAND SURFACE. ☒ below

YIELD (gpm): N/A METHOD OF TEST N/A

WATER ZONES (depth): N/A

CHLORINATION: Type None Amount \_\_\_\_\_

CASING:

Depth	Diameter	Wall Thickness or Weight/Ft.	Material
From <u>Surface</u> To <u>3.0</u> Ft.	<u>2"</u>	<u>Sch. 40</u>	<u>PVC</u>

From \_\_\_\_\_ To \_\_\_\_\_ Ft. (0.19")

From \_\_\_\_\_ To \_\_\_\_\_ Ft. \_\_\_\_\_

GROUT:

Depth	Material	Method
From <u>Surface</u> To <u>1.5</u> Ft.	<u>Portland #1</u>	<u>Pour</u>

From \_\_\_\_\_ To \_\_\_\_\_ Ft. \_\_\_\_\_

SCREEN:

Depth	Diameter	Slot Size	Material
From <u>3.0</u> To <u>13.0</u> Ft.	<u>2</u> in.	<u>0.010</u> in.	<u>PVC</u>

From \_\_\_\_\_ To \_\_\_\_\_ Ft. \_\_\_\_\_ in. \_\_\_\_\_ in.

From \_\_\_\_\_ To \_\_\_\_\_ Ft. \_\_\_\_\_ in. \_\_\_\_\_ in.

GRAVEL PACK:

Depth	Size	Material
From <u>2.5</u> To <u>15.0</u> Ft.	<u>Coarse</u>	<u>Sand</u>

From \_\_\_\_\_ To \_\_\_\_\_ Ft. \_\_\_\_\_

REMARKS: Well point length = 0.25'

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT

DATE

Submit original to Division of Environmental Management and copy to well owner.



AQUATERRA, INC.

ATTACHMENT A

## Subsurface Drill Log

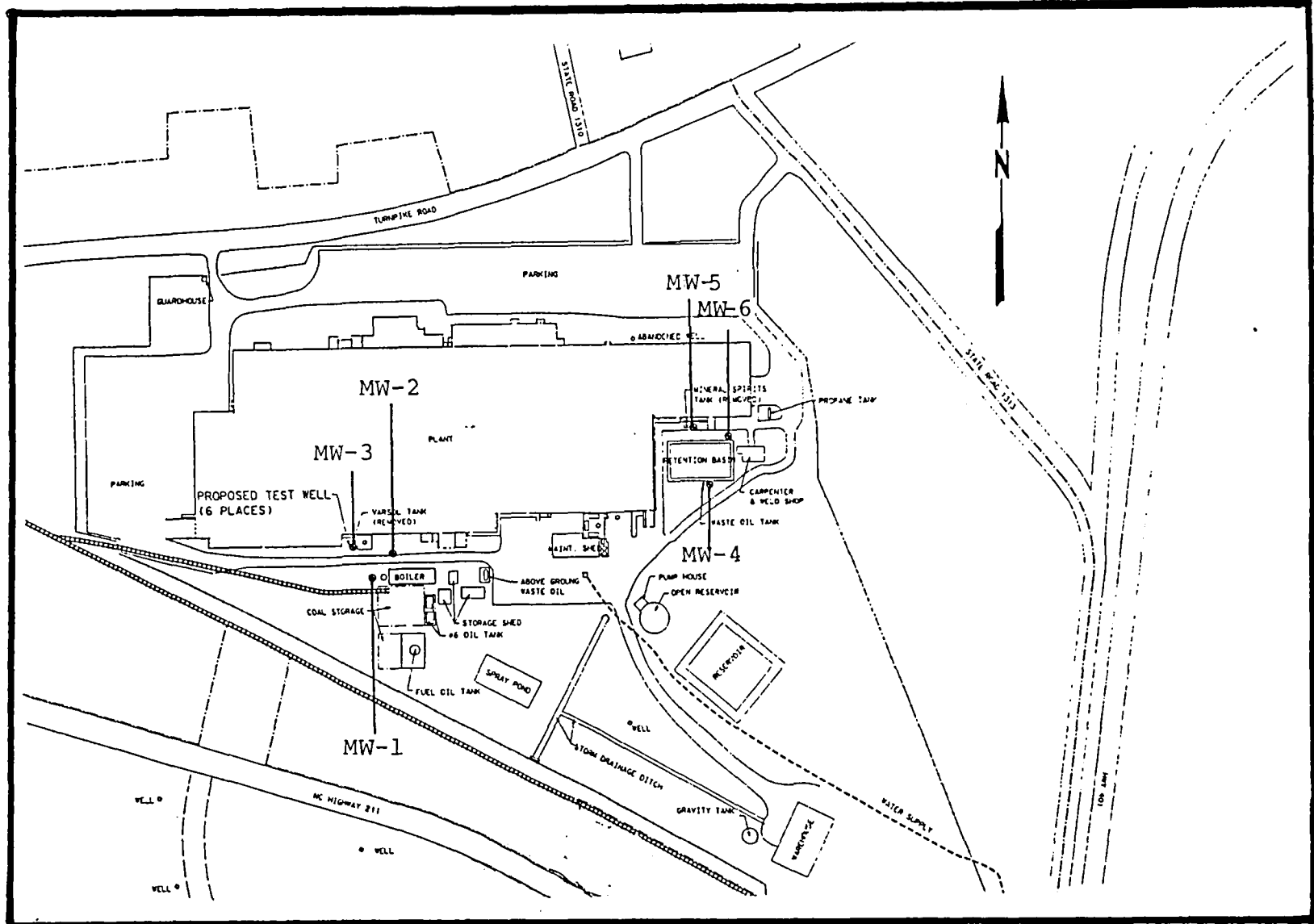
MW-3

Depth (Feet)	SOIL/MATERIAL DESCRIPTION _____	SAMPLES	OVA Results (ppm)		Remarks
			SPT. SPOON	CUTTINGS	
	A. See Below				
	Brick red silty clay (ML)				No solvent odor
	Light brown to cream white silty clay (CL)				
5	Light brown to medium brown silty clayey sand (CL)		100+		Faint solvent odor Spoon 5.0'-6.5' Blows 1-1-1
10	Brick red and light brown silty, sandy, clay (ML)				Moderate solvent odor, waxy
15	Boring terminated @ 15.0' below grade in brick red and light brown silty, sandy, clay (ML)				
20					
25					
	A. Grass, grass roots, light brown, sandy, clayey, silty (OL) BDL-Below OVA detection limit of 0.01 ppm total volatilized organic compounds				

Drilling &amp; Sampling Meets ASTM D-1586 &amp; ASTM D-1587

Page 1 of 1Supervisor Steven M. BurrowsLocation BI - Raeford, NCRig Type Hollow Stem AugerDate Drilled 11-7-90Weather SunnyJob Number 467C





ATTACHMENT B

PROJECT:  
BURLINGTON INDUSTRIES  
RAEFORD, NORTH CAROLINA

TITLE:  
MONITOR WELL LOCATION MAP

JOB: 467C	DRAWING: ----	FIGURE: --	SCALE: 1"=400'
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AQUATERRA, INC.  
RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

Quad. No. \_\_\_\_\_ Serial No. 118602  
 Lat. \_\_\_\_\_ Long. \_\_\_\_\_ Pc \_\_\_\_\_  
 Minor Basin \_\_\_\_\_  
 Basin Code \_\_\_\_\_  
 Header Ent. \_\_\_\_\_ GW-1 Ent. \_\_\_\_\_

ILLING CONTRACTOR Carolina Drilling  
ILLER REGISTRATION NUMBER 728

STATE WELL CONSTRUCTION  
PERMIT NUMBER: 46-0064-WM-0060

MW-4

County: Hoke

Depth

DRILLING LOG

From	To
------	----

### Formation Description

See Attachment A

DATE DRILLED 11-7-90 USE OF WELL Monitoring

OTAL DEPTH 15.0' CUTTINGS COLLECTED ☒ Yes ☐ No

DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

STATIC WATER LEVEL: 5.99 FT. ☐ above TOP OF CASING,  
☒ below  
TOP OF CASING IS 0 FT. ABOVE LAND SURFACE.

YIELD (gpm): N/A METHOD OF TEST N/A

WATER ZONES (depth): N/A

CHLORINATION: Type None Amount           

CASING:

Depth	Diameter	Wall Thickness or Weight/Ft.	Material
From <u>Surface</u> To <u>3.0</u> Ft.	<u>2"</u>	<u>Sch. 40</u>	<u>PVC</u>
From _____ To _____ Ft.	_____	<u>(0.19")</u>	_____
From _____ To _____ Ft.	_____	_____	_____

If additional space is needed use back of form.

LOCATION SKETCH

(Show direction and distance from at least two State Roads, or other map reference points)

GROUT:

Depth	Material	Method
From <u>Surface</u> To <u>1.5 Ft</u>	<u>Portlant #1</u>	<u>Pour</u>
From _____ To _____ Ft.	_____	_____

See Attachment B

SCREEN:

Depth	Diameter	Slot Size	Material
From 3.0 To 13.0 Ft.	2" in.	0.010 in.	PVC
From _____ To _____ Ft.	_____ in.	_____ in.	_____
From _____ To _____ Ft.	_____ in.	_____ in.	_____

GRAVEL PACK:

Depth	Size	Material
From <u>2.5</u> To <u>15.0</u> Ft.	<u>Coarse</u>	<u>Sand</u>
From _____ To _____ Ft.		

REMARKS: Well point length = 0.25'

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER. 1/16/

SIGNATURE OF CONTRACTOR OR AGENT

DATE \_\_\_\_\_

Submit original to Division of Environmental Measurement and copy to well owner.



AQUATERRA, INC.

MW-4

ATTACHMENT A

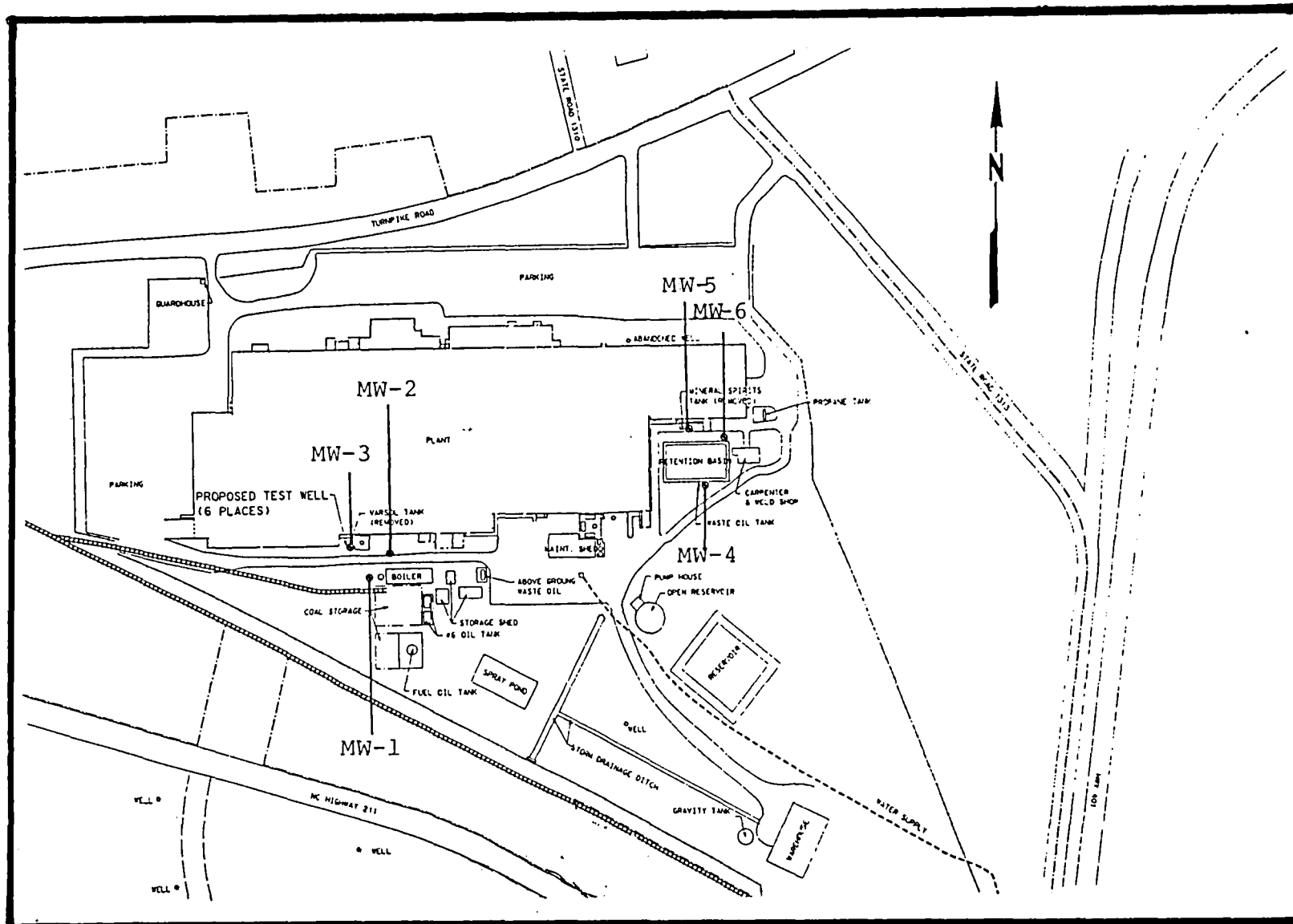
## Subsurface Drill Log

Depth (Feet)	SOIL/MATERIAL DESCRIPTION Surface Elevation _____	SAMPLES	OVA Results (ppm)		Remarks
			SPT. SPOON	CUTTINGS	
	A. See Below				
	Light brown to tan silty clay (ML)				No mineral spirit odor
5	Light brown to cream white silty clay (CL)		BDL		No mineral spirit odor Spoon 3.5'-5.0' Blows 1-2-1
10	Cream white silty, sandy clay (CL)			BDL	Damp soil at approximately 7.0'  No mineral spirit odor
15	White to light tan-cream silty, sandy, fine to medium grain (SM)				Wet soil at approximately 12.5' No mineral spirit odor
20	Boring terminated @ 15.0' below grade in white to light tan-cream silty sand, fine to medium grain (SM)				
25					
BDL-Below OVA detection limit of 0.01 ppm total volatilized organic compounds					

Drilling &amp; Sampling Meets ASTM D-1586 &amp; ASTM D-1587

Page 1 of 1Supervisor Steven M. BurrowsLocation BI - Raeford, NCRig Type Hollow Stem AugerDate Drilled 11-7-90Weather SunnyJob Number 467C





ATTACHMENT B

PROJECT:

BURLINGTON INDUSTRIES  
RAEFORD, NORTH CAROLINA

TITLE:

MONITOR WELL LOCATION MAP

JOB:  
467C

DRAWING:  
----

FIGURE:  
--

SCALE:  
1"=400'



AQUATERRA, INC.

RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

FOR OFFICE USE ONLY

Quad. No. \_\_\_\_\_ Serial No. 118603  
Lat. \_\_\_\_\_ Long. \_\_\_\_\_ Pc \_\_\_\_\_  
Minor Basin \_\_\_\_\_  
Basin Code \_\_\_\_\_  
Header Ent. \_\_\_\_\_ GW-1 Ent. \_\_\_\_\_

## WELL CONSTRUCTION RECORD

DILLING CONTRACTOR Carolina Drilling

DILLER REGISTRATION NUMBER 728

STATE WELL CONSTRUCTION  
PERMIT NUMBER: 46-0064-WM-0060

WELL LOCATION: (Show sketch of the location below)

MW-5

Nearest Town: Raeford

County: Hoke

State Highways 401 and 211

Road, Community, or Subdivision and Lot No.)

OWNER Burlington Industries

ADDRESS Post Office Box 788

(Street or Route No.)

Clarksville VA 23927

City or Town

State

Zip Code

DATE DRILLED 11-8-90 USE OF WELL Monitoring

TOTAL DEPTH 14.0' CUTTINGS COLLECTED ☒ Yes ☐ No

DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

STATIC WATER LEVEL: 9.04 FT. ☐ above TOP OF CASING,

☒ below

TOP OF CASING IS 0 FT. ABOVE LAND SURFACE.

YIELD (gpm): N/A METHOD OF TEST N/A

WATER ZONES (depth): N/A

CHLORINATION: Type None Amount \_\_\_\_\_

CASING:

Wall Thickness  
or Weight/Ft.

From Surface To 3.75 Ft. 2" Sch. 40 PVC

From \_\_\_\_\_ To \_\_\_\_\_ Ft. (0.19")

From \_\_\_\_\_ To \_\_\_\_\_ Ft. \_\_\_\_\_

GROUT:

Depth

Material

Method

From Surface To 2.0 Ft. Portland #1 Pour

From \_\_\_\_\_ To \_\_\_\_\_ Ft. \_\_\_\_\_

SCREEN:

Depth

Diameter

Slot Size

Material

From 3.75 To 13.75 Ft. 2 in. 0.010 in. PVC

From \_\_\_\_\_ To \_\_\_\_\_ Ft. \_\_\_\_\_ in. \_\_\_\_\_ in. \_\_\_\_\_

From \_\_\_\_\_ To \_\_\_\_\_ Ft. \_\_\_\_\_ in. \_\_\_\_\_ in. \_\_\_\_\_

GRAVEL PACK:

Depth

Size

Material

From 3.0 To 14.0 Ft. Coarse Sand

From \_\_\_\_\_ To \_\_\_\_\_ Ft. \_\_\_\_\_

REMARKS: Well point length = 0.25'

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT

DATE

2/1/91

Submit original to Division of Environmental Management and copy to well owner.



AQUATERRA, INC.

MW-5

ATTACHMENT A

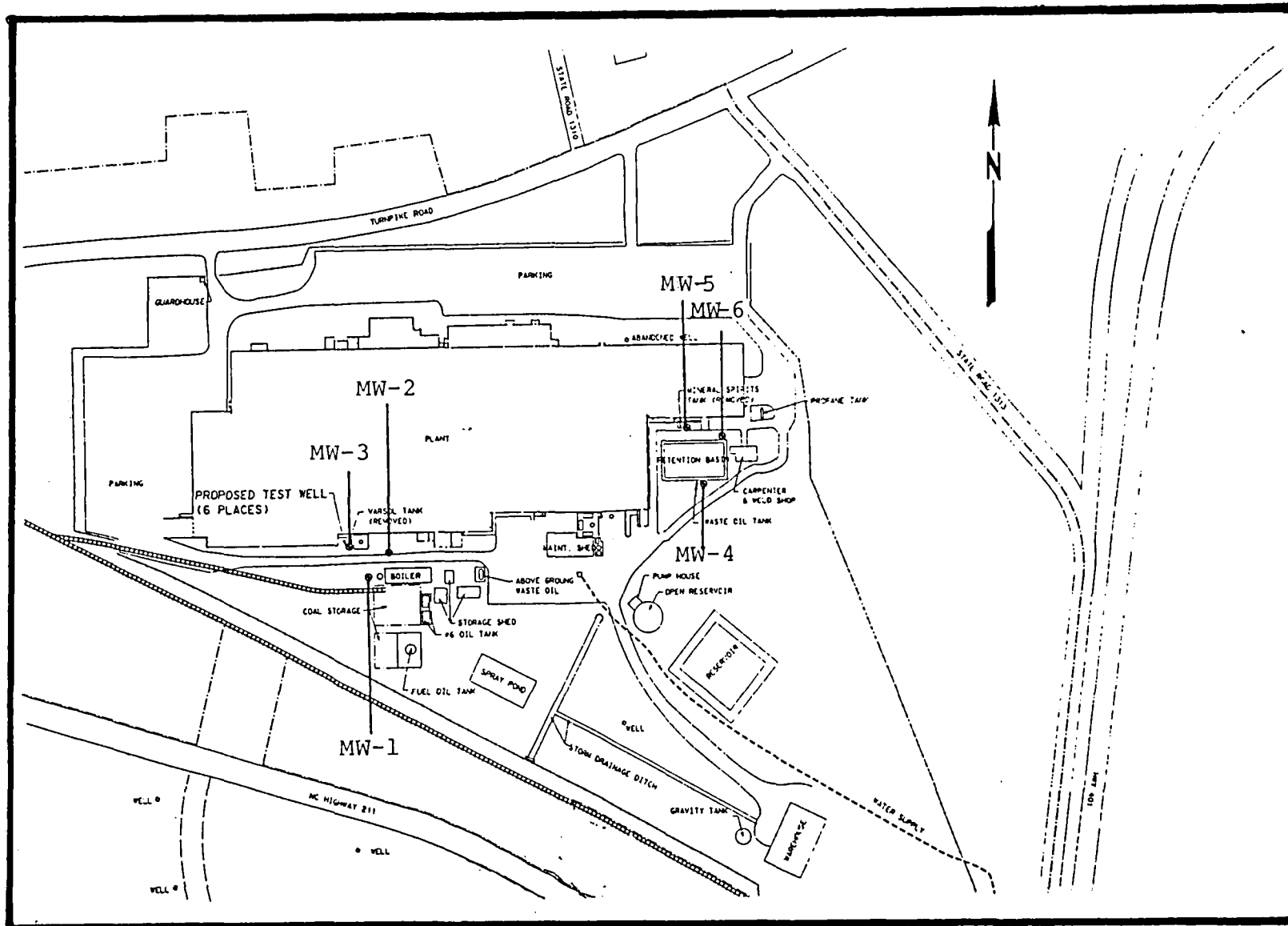
## Subsurface Drill Log

Depth (Feet)	SOIL/MATERIAL DESCRIPTION	Surface Elevation	SAMPLES	OVA Results (ppm)		Remarks
				SPT. SPOON	CUTTINGS	
	A. See Below					
5	Light to medium brown silty clay (ML)				BDL	No mineral spirit odor
10	Tan, sandy, silty clay (CL)				BDL	Moist soil cuttings at approximately 8.0' No mineral spirit odor
	Fan clayey, silty fine to medium grain sand (SC)				100+	Wet soil cuttings @ approximately 12.0' Faint mineral spirit odor
15	Boring terminated at 14.0' below grade in tan clayey, silty fine to medium grain sand (SC)					
20						
25						
	A. Asphalt and composite stone					
	BDL-Below OVA detection limit of 0.01 ppm total volatilized organic compounds					

Drilling &amp; Sampling Meets ASTM D-1586 &amp; ASTM D-1587

Page 1 of 1Supervisor Steven M. BurrowsLocation BI - Raeford, NCRig Type Hollow Stem AugerDate Drilled 11-8-90Weather SunnyJob Number 467C





ATTACHMENT B

PROJECT:

BURLINGTON INDUSTRIES  
RAEFORD, NORTH CAROLINA

TITLE:

MONITOR WELL LOCATION MAP

JOB:

467C

DRAWING:

----

FIGURE:

--

SCALE:

1"=400'



AQUATERRA, INC.

RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

FOR OFFICE USE ONLY

Quad. No. \_\_\_\_\_ Serial No. 118604  
Lat. \_\_\_\_\_ Long. \_\_\_\_\_ Pc \_\_\_\_\_  
Minor Basin \_\_\_\_\_  
Basin Code \_\_\_\_\_  
Header Ent. \_\_\_\_\_ GW-1 Ent. \_\_\_\_\_

## WELL CONSTRUCTION RECORD

DILLING CONTRACTOR Carolina Drilling  
DILLER REGISTRATION NUMBER 728

STATE WELL CONSTRUCTION  
PERMIT NUMBER: 46-0064-WM-0060

WELL LOCATION: (Show sketch of the location below)

MW-6

Nearest Town: Raeford

County: Hoke

State Highways 401 and 211  
Road, Community, or Subdivision and Lot No.)

OWNER Burlington Industries

ADDRESS Post Office Box 788  
(Street or Route No.)  
Clarksville VA 23927

City or Town State Zip Code

DATE DRILLED 11-8-90 USE OF WELL Monitoring

TOTAL DEPTH 13.5' CUTTINGS COLLECTED ☒ Yes ☐ No

DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

STATIC WATER LEVEL: 8.55 FT. ☐ above TOP OF CASING,  
TOP OF CASING IS 0 FT. ☒ below LAND SURFACE.

YIELD (gpm): N/A METHOD OF TEST N/A

WATER ZONES (depth): N/A

CHLORINATION: Type None Amount \_\_\_\_\_

CASING:

Depth	Diameter	Wall Thickness or Weight/Ft.	Material
From <u>Surface</u> To <u>3.0</u> Ft.	<u>2"</u>	<u>Sch. 40</u>	<u>PVC</u>
From _____ To _____ Ft.	<u>(0.19")</u>		
From _____ To _____ Ft.			

If additional space is needed use back of form.

### LOCATION SKETCH

(Show direction and distance from at least two State Roads, or other map reference points)

GROUT:

Depth	Material	Method
From <u>Surface</u> To <u>1.5</u> Ft.	<u>Portland #1</u>	<u>Pour</u>
From _____ To _____ Ft.		

See Attachment B

SCREEN:

Depth	Diameter	Slot Size	Material
From <u>3.0</u> To <u>13.0</u> Ft.	<u>2</u>	<u>in. 0.01</u>	<u>PVC</u>
From _____ To _____ Ft.			
From _____ To _____ Ft.			

GRAVEL PACK:

Depth	Size	Material
From <u>2.5</u> To <u>13.5</u> Ft.	<u>Coarse</u>	<u>Sand</u>
From _____ To _____ Ft.		

REMARKS: Well point length = 0.25'

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT

DATE

2/1/91

Submit original to Division of Environmental Management and copy to well owner.



AQUATERRA, INC.

MW-6

ATTACHMENT A

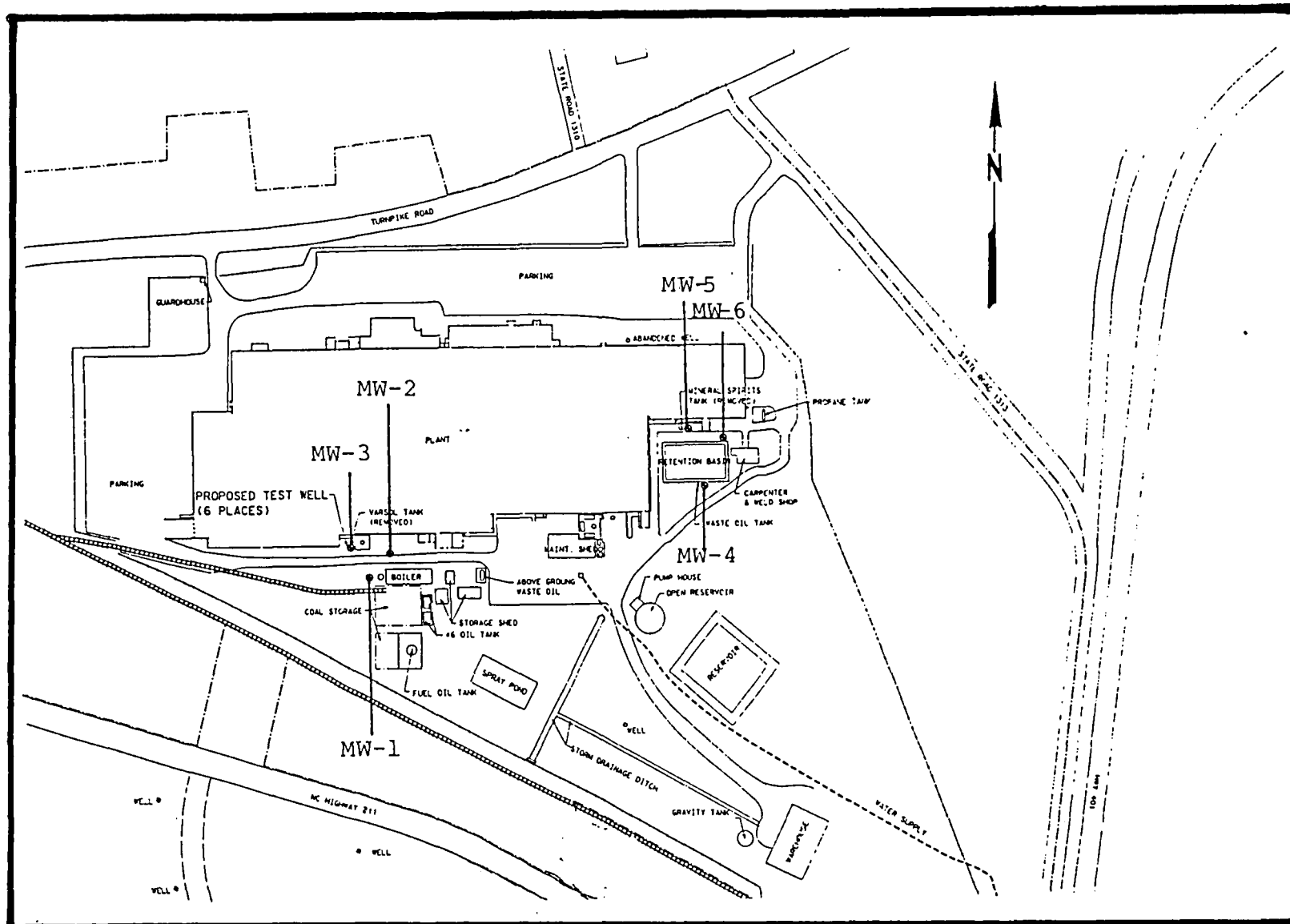
## Subsurface Drill Log

Depth (Feet)	SOIL/MATERIAL DESCRIPTION Surface Elevation _____	SAMPLES	OVA Results (ppm)		Remarks
			SPT. SPOON	CUTTINGS	
	A. See Below				
	Tan to light brown silty clay (CL)			BDL	No mineral spirit odor
5	Tan to light brown silty, sandy clay (CL)			BDL	No mineral spirit odor
10	Brick red to pink sandy, silty clay (ML)			BDL	No mineral spirit odor
	Cream white silty clay (CL)				
	B. See Below				
15	Boring terminated at 13.5' below grade in cream white silty to fine and medium grain sand (SM)				
20					
	A. Grass, grass roots, tan silty clay (OL)				
	B. Cream white silty to fine and medium grain sand (SM)				
25					
BDL-Below OVA detection limit of 0.01 ppm total volatilized organic compounds					

Drilling &amp; Sampling Meets ASTM D-1586 &amp; ASTM D-1587

Page 1 of 1Supervisor Steven M. BurrowsLocation BI - Raeford, NCRig Type Hollow Stem AugerDate Drilled 11-8-90Weather SunnyJob Number 467C





ATTACHMENT B

PROJECT:

BURLINGTON INDUSTRIES  
RAEFORD, NORTH CAROLINA

TITLE:

MONITOR WELL LOCATION MAP

JOB:  
467C

DRAWING:  
----

FIGURE:  
--

SCALE:  
1"=400'



AQUATERRA, INC.  
RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

## WELL CONSTRUCTION RECORD

MW-6d

FOR OFFICE USE ONLY

Quad. No. \_\_\_\_\_ Serial No. 133594  
Lat. \_\_\_\_\_ Long. \_\_\_\_\_ Pc \_\_\_\_\_  
Minor Basin \_\_\_\_\_  
Basin Code \_\_\_\_\_  
Header Ent. \_\_\_\_\_ GW-1 Ent. \_\_\_\_\_

DRILLING CONTRACTOR Carolina Drilling

DRILLER REGISTRATION NUMBER 728

STATE WELL CONSTRUCTION  
PERMIT NUMBER: 46-0064-WM-0060

1. WELL LOCATION: (Show sketch of the location below)

Nearest Town: Raeford, North Carolina  
401 Bypass & State Highway 210  
(Road, Community, or Subdivision and Lot No.)

County: Hoke

2. OWNER Burlington Industries, Inc.

ADDRESS Post Office Box 788

Clarksville, VA 23927  
(Street or Route No.)

City or Town State Zip Code

3. DATE DRILLED 1-13&14-92 USE OF WELL Monitoring

4. TOTAL DEPTH 76.0' CUTTINGS COLLECTED ☒ Yes ☐ No

5. DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

6. STATIC WATER LEVEL: 47.4 FT. ☐ above TOP OF CASING,  
TOP OF CASING IS 0.0 FT. ABOVE LAND SURFACE. ☒ below

7. YIELD (gpm): N/A METHOD OF TEST \_\_\_\_\_

8. WATER ZONES (depth): N/A

9. CHLORINATION: Type N/A Amount \_\_\_\_\_

10. CASING:

	Depth	Diameter	Wall Thickness or Weight/Ft.	Material
Outer From	<u>0.0</u>	To <u>47.5</u> Ft.	<u>6"</u> <u>Sch.40</u>	<u>PVC</u>
Inner From	<u>0.0</u>	To <u>70.0</u> Ft.	<u>2"</u> <u>Sch.40</u>	<u>PVC</u>
From	_____	To _____ Ft.	_____	_____

11. GROUT:

Depth	Material	Method
From <u>0.0</u> To <u>65.0</u> Ft.	<u>Portland #1</u>	<u>Pour</u>
From _____ To _____ Ft.	_____	_____

12. SCREEN:

Depth	Diameter	Slot Size	Material
From <u>70.0</u> To <u>75.0</u> Ft.	<u>2</u> in.	<u>0.010</u> in.	<u>PVC</u>
From _____ To _____ Ft.	_____ in.	_____ in.	_____
From _____ To _____ Ft.	_____ in.	_____ in.	_____

13. GRAVEL PACK:

Depth	Size	Material
From <u>67.0</u> To <u>76.0</u> Ft.	<u>Torpedo</u>	<u>Sand</u>
From _____ To _____ Ft.	_____	_____

14. REMARKS: Bentonite seal from: 65.0' to 67.0'

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Shirley M. Brown  
SIGNATURE OF CONTRACTOR OR AGENT

1-21-92  
DATE

Submit original to Division of Environmental Management and copy to well owner.

RECEIVED  
JAN 24 1992

GROUNDWATER SECTION  
RALEIGH, NC

If additional space is needed use back of form.

LOCATION SKETCH

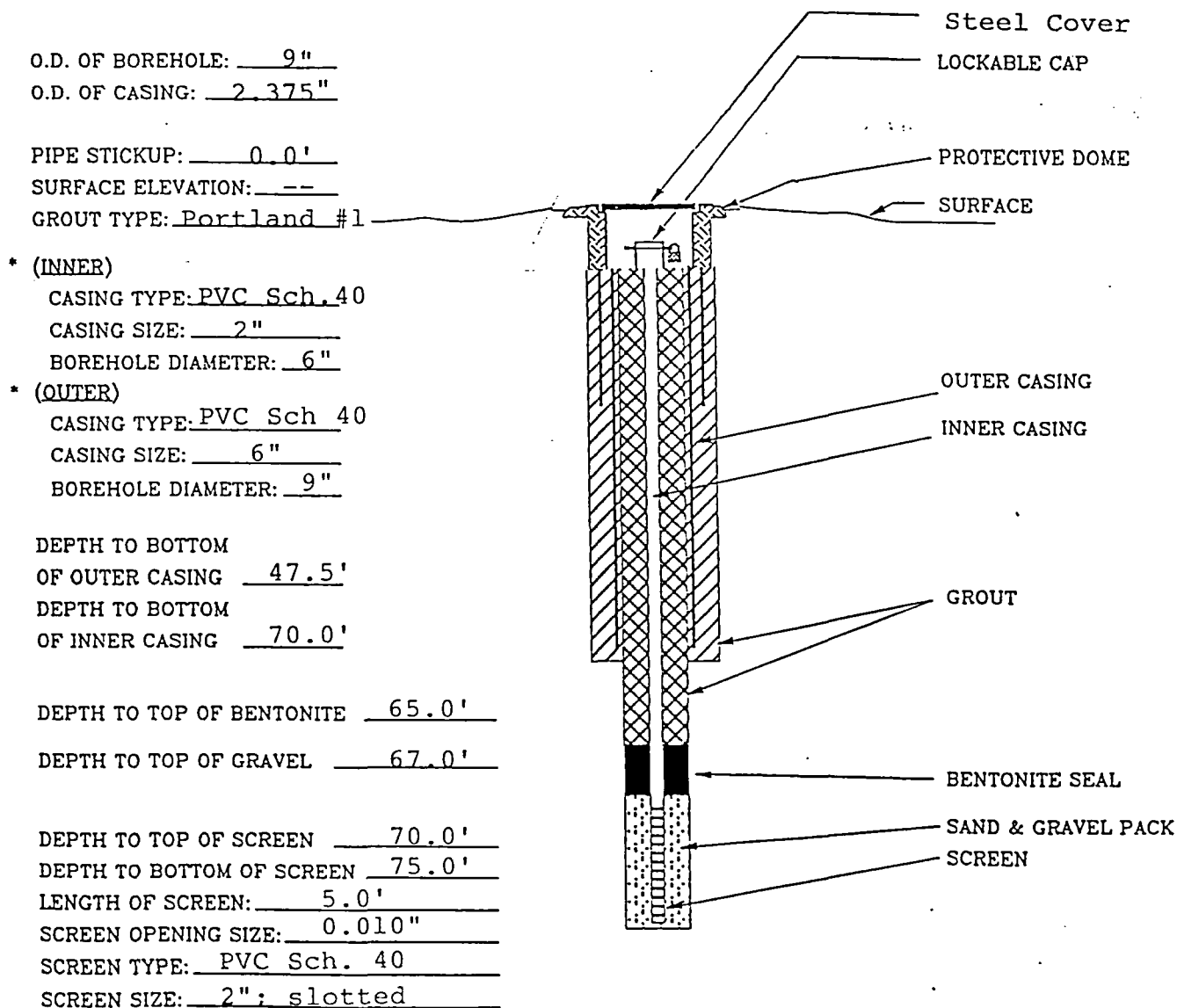
(Show direction and distance from at least two State Roads, or other map reference points)

See Attached

RECEIVED  
JAN 30 1992

ENV. MANAGEMENT  
FAYETTEVILLE REG. OFFICE

WELL NUMBER: MW-6d DRILLING METHOD: Hollow Stem Auger  
 DATE STARTED: 1-13-92 DRILLING FLUIDS: None  
 DATE FINISHED: 1-14-92 STATIC WATER LEVEL: \_\_\_\_\_ DATE: \_\_\_\_\_  
 GEOLOGIST/ENG Scott Ball OBSERVED BY: George Bridger  
 REMARKS: Total Depth (TD) Well Boring = 76.0'; TD Wellpoint = 75.20';  
Wellpoint Length = 0.20'



PROJECT:

Burlington Industries  
 Raeford, North Carolina

TITLE:

MW-6d Well Schematic

JOB:  
 C467

DRAWING:

FIGURE:

SCALE:



AQUATERRA, INC.

RALEIGH, GREENSBORO, CHARLOTTE  
 NORTH CAROLINA





AQUATERRA, INC.

MW-6d

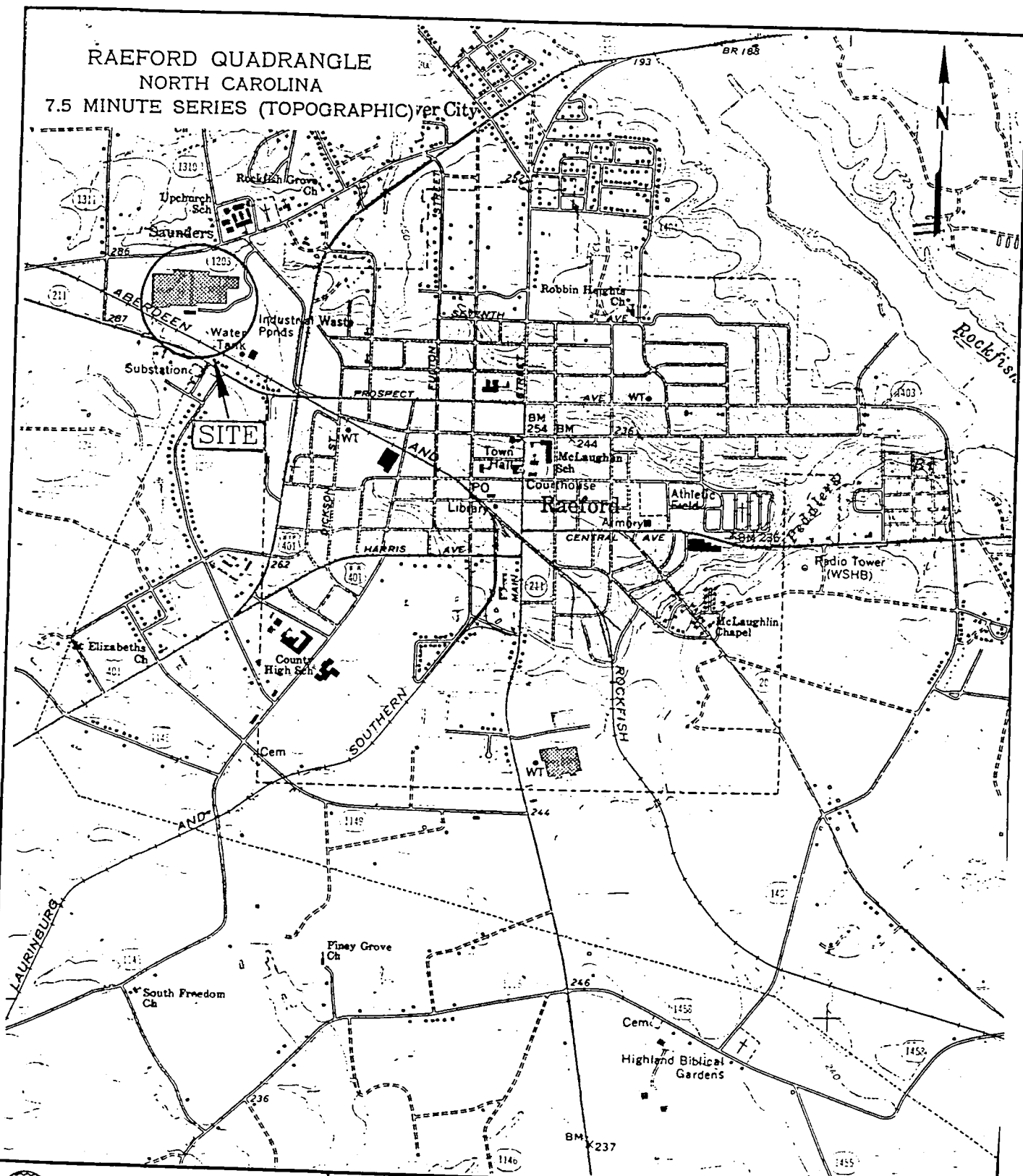
## Subsurface Drill Log

Depth (Feet)	SOIL/MATERIAL DESCRIPTION	Surface Elevation	SAMPLES	OVA Results (ppm)		Remarks
				SPT. SPOON	CUTTINGS	
	Topsoil and grass roots			BDL		Spoon: 3.5'-5.0'
	Orange-tan silty CLAY (ML)					Blows: 8-12-15
						No solvent odor
	Pink-tan silty CLAY (ML)			BDL		Spoon: 8.5'-10.0'
20						Blows: 3-5-6
						No solvent odor
	Tan sandy CLAY (CL)					Wet soil cuttings
40						@ 12.0' b.g.
	Brick red CLAY (CH)					
60	Dark tan sandy CLAY (CL)					
	Yellow sandy CLAY (CL)					
80	Boring terminated @ 76.0' below grade in yellow sandy CLAY (CL)					
100						
BDL-Below OVA detection limit of 0.01 ppm total volatilized organic compounds						

Drilling &amp; Sampling Meets ASTM D-1586 &amp; ASTM D-1587

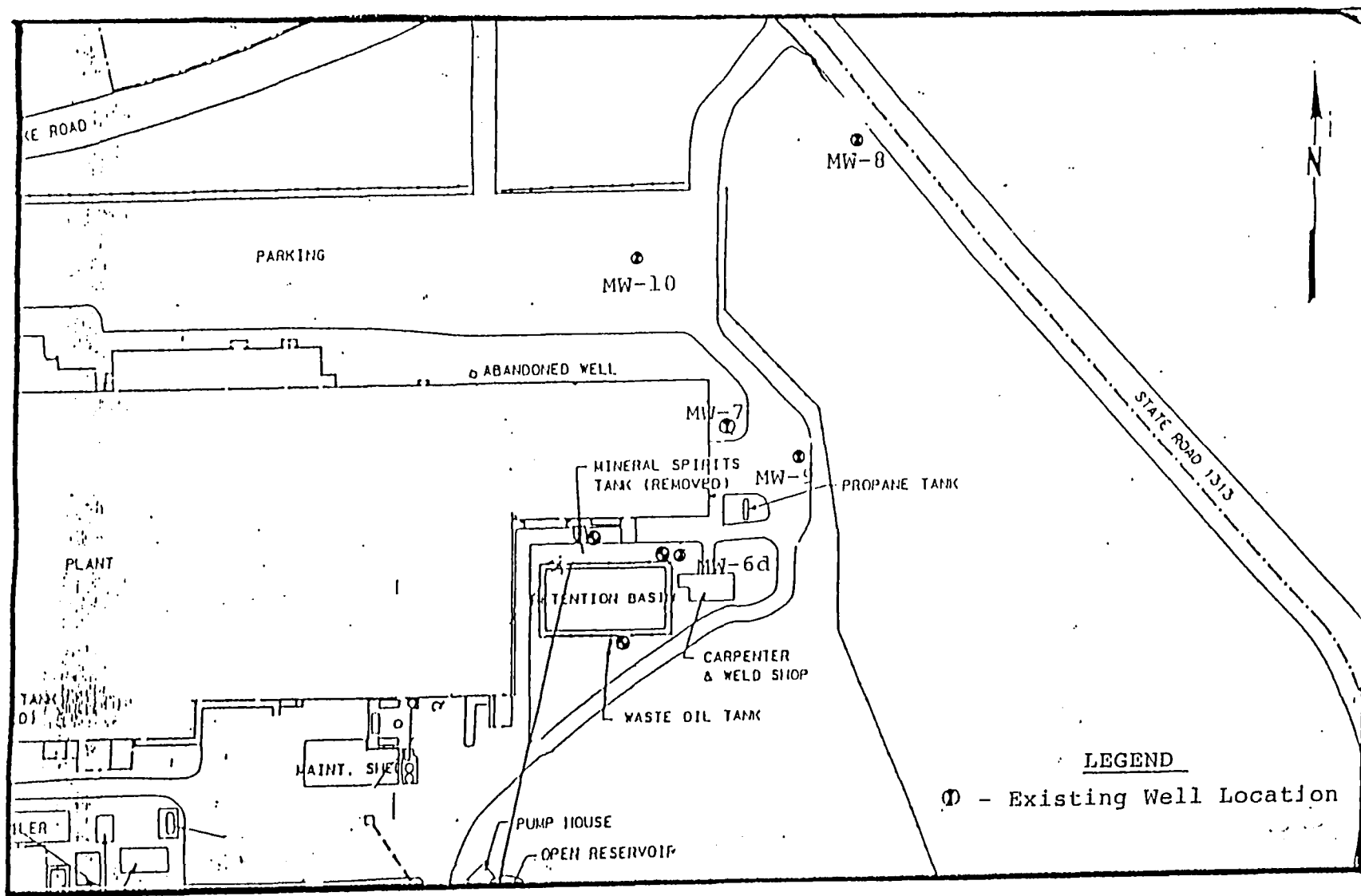
Page 1 of 1Supervisor Scott BallLocation BI-Raeford, North CarolinaRig Type Hollow Stem AugerDate Drilled 1-13 thru 1-14-92Weather Sunny; 40°FJob Number C467

RAEFORD QUADRANGLE  
NORTH CAROLINA  
7.5 MINUTE SERIES (TOPOGRAPHIC) per City



AQUATERRA, INC.  
RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

Author HMT	Drawing	Layers	Date	Title Site Location
Job No C-467	Revision	Figure 1	Scale 1"=2000'	Project Burlington Industries Raeford, North Carolina



PROJECT:

Burlington Industries, Inc.  
Raeford, North Carolina

TITLE:

Well Location Map

JOB:  
C467

DRAWING:  
---

FIGURE:

SCALE:  
1"=200'



**AQUATERRA, INC.**  
RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA



Quad. No. \_\_\_\_\_ Serial No. B3593  
Lat. \_\_\_\_\_ Long. \_\_\_\_\_ Pc \_\_\_\_\_  
Minor Basin \_\_\_\_\_  
Basin Code \_\_\_\_\_  
Header Ent. \_\_\_\_\_ GW-1 Ent \_\_\_\_\_

## MW-8

DRILLER REGISTRATION NUMBER 728

STATE WELL CONSTRUCTION  
PERMIT NUMBER: 46-0064-WM-0060

14. REMARKS: Bentonite seal from: 7.0' to 8.0'

See Attached

RECEIVED  
JAN 24 1992

GROUNDWATER SECTION  
RALEIGH, NC

If additional space is needed use back of form.

LOCATION SKETCH

(Show direction and distance from at least two State Roads, or other map reference points)

See Attached

RECEIVED  
JAN 30 1992

ENV. MANAGEMENT  
FAYETTEVILLE REG. OFFICE

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NOAC 20. WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT

DATE \_\_\_\_\_

Submit original to Division of Environmental Management and copy to well owner.

# STANDARD SUB-GRADE 2" MONITORING WELL CONSTRUCTION SCHEMATIC

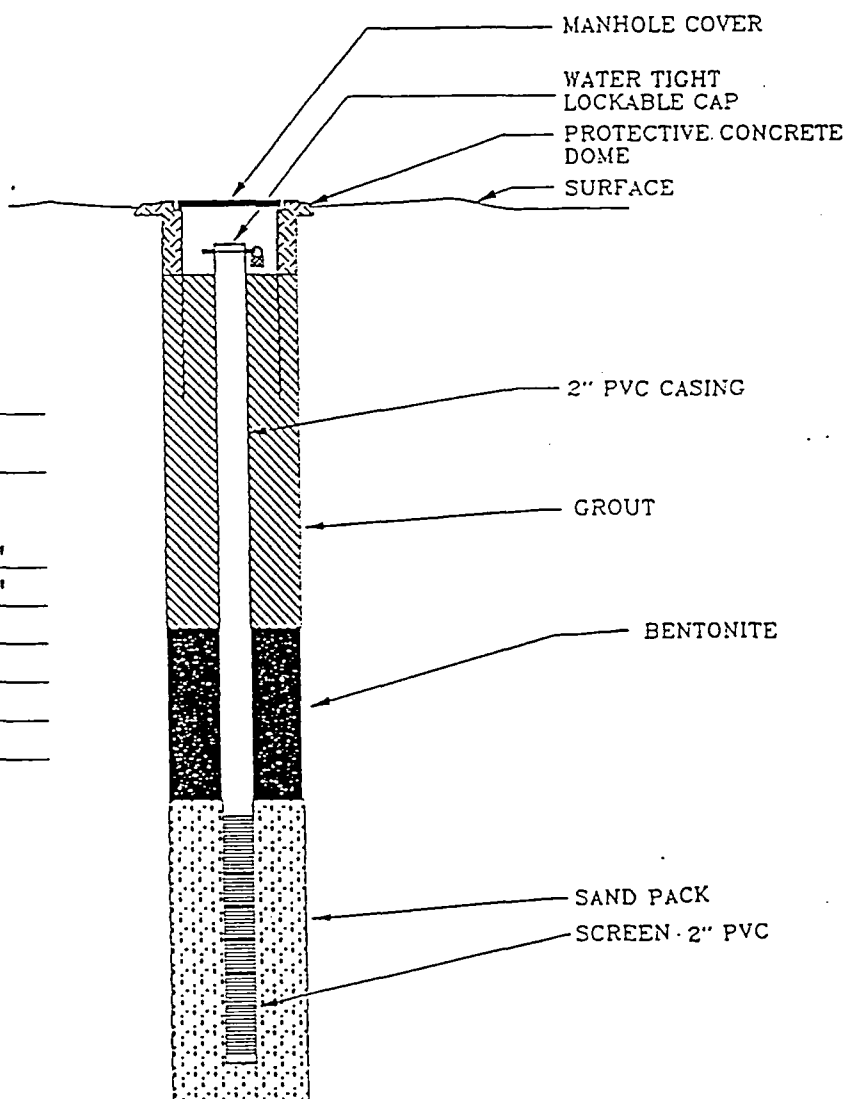
WELL NUMBER: MW-8 DRILLING METHOD: Hollow Stem Auger  
 DATE STARTED: 1-14-92 DRILLING FLUIDS: None  
 DATE FINISHED: 1-14-92 STATIC WATER LEVEL: \_\_\_\_\_ DATE: \_\_\_\_\_  
 GEOLOGIST/ENG: Scott Ball OBSERVED BY: George Bridger  
 REMARKS: Total Depth (TD) Well Boring = 28.5'; TD Wellpoint = 20.2'  
Wellpoint Length = 0.20'

O.D. OF BOREHOLE: 8"  
 O.D. OF CASING: 2.375"

PIPE STICKUP: 0.0'  
 SURFACE ELEVATION: --  
 GROUT TYPE: Portland #1  
 CASING TYPE: PVC Sch. 40  
 CASING SIZE: 2"  
 DEPTH TO BOTTOM  
 OF CASING 10.0'

DEPTH TO TOP OF BENTONITE 7.0'  
 DEPTH TO TOP OF GRAVEL 8.0'

DEPTH TO TOP OF SCREEN 10.0'  
 DEPTH TO BOTTOM OF SCREEN 20.0'  
 LENGTH OF SCREEN: 10.0'  
 SCREEN OPENING SIZE: 0.010"  
 SCREEN TYPE: PVC Sch. 40  
 SCREEN SIZE: 2"; Slotted



PROJECT:  
 Burlington Industries, Inc  
 Raeford, North Carolina

TITLE:  
 MW-8 Well Schematic  
 JOB: C467  
 DRAWING: --  
 FIGURE: --  
 SCALE: 1" = 1'



AQUATERRA, INC.  
 RALEIGH, GREENSBORO, CHARLOTTE  
 NORTH CAROLINA



AQUATERRA, INC.

MW-8

## Subsurface Drill Log

Depth (Feet)	SOIL/MATERIAL DESCRIPTION	Surface Elevation	SAMPLES	OVA Results (ppm)		Remarks
				SPT. SPOON	CUTTINGS	
	Grass, grass roots, and topsoil					
	Dark brown sandy CLAY (ML)		BDL			Spoon: 3.5'-5.0' Blows: 2-3-4 No solvent odor
5						
	Tan silty CLAY (ML)		BDL			Spoon: 8.5'-10.0' Blows: 3-5-9 No solvent odor
10						
	Yellow sandy CLAY (ML)		BDL			Spoon: 13.5'-15.0' Blows: 2-3-3 No solvent odor
15						
	Orange sand CLAY (ML)					
20						
	Yellow sandy CLAY (ML)					
25						
	Boring terminated @ 28.5' below grade in yellow sandy CLAY (ML)					BDL-Below OVA detection limit of 0.01 ppm total volatilized organic compounds

Drilling &amp; Sampling Meets ASTM D-1586 &amp; ASTM D-1587

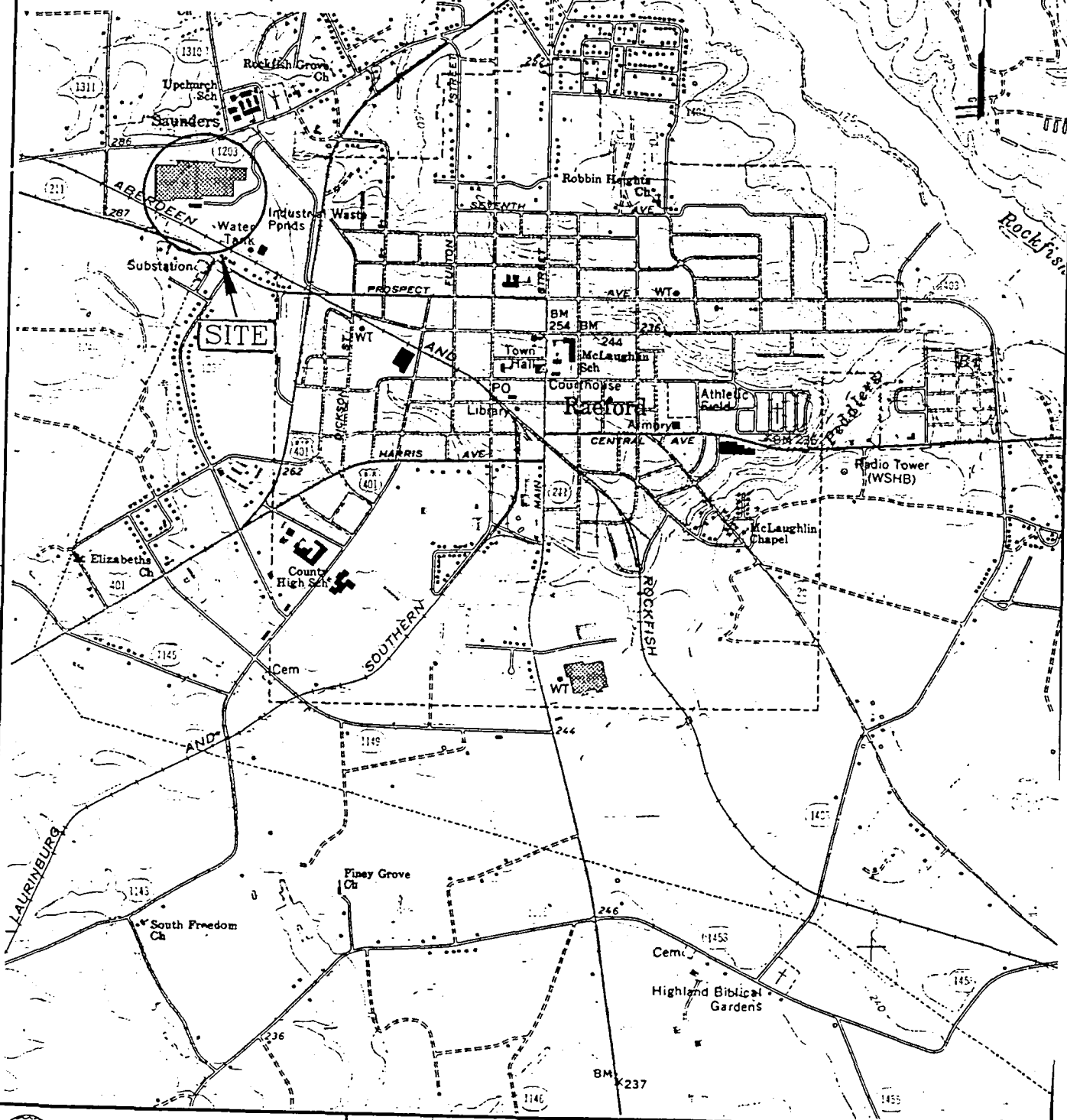
Page 1 of 1

Supervisor Scott Ball  
Rig Type Hollow Stem Auger  
Weather Sunny, 35°F

Location BI - Raeford, North Carolina  
Date Drilled 1-14-92  
Job Number C467

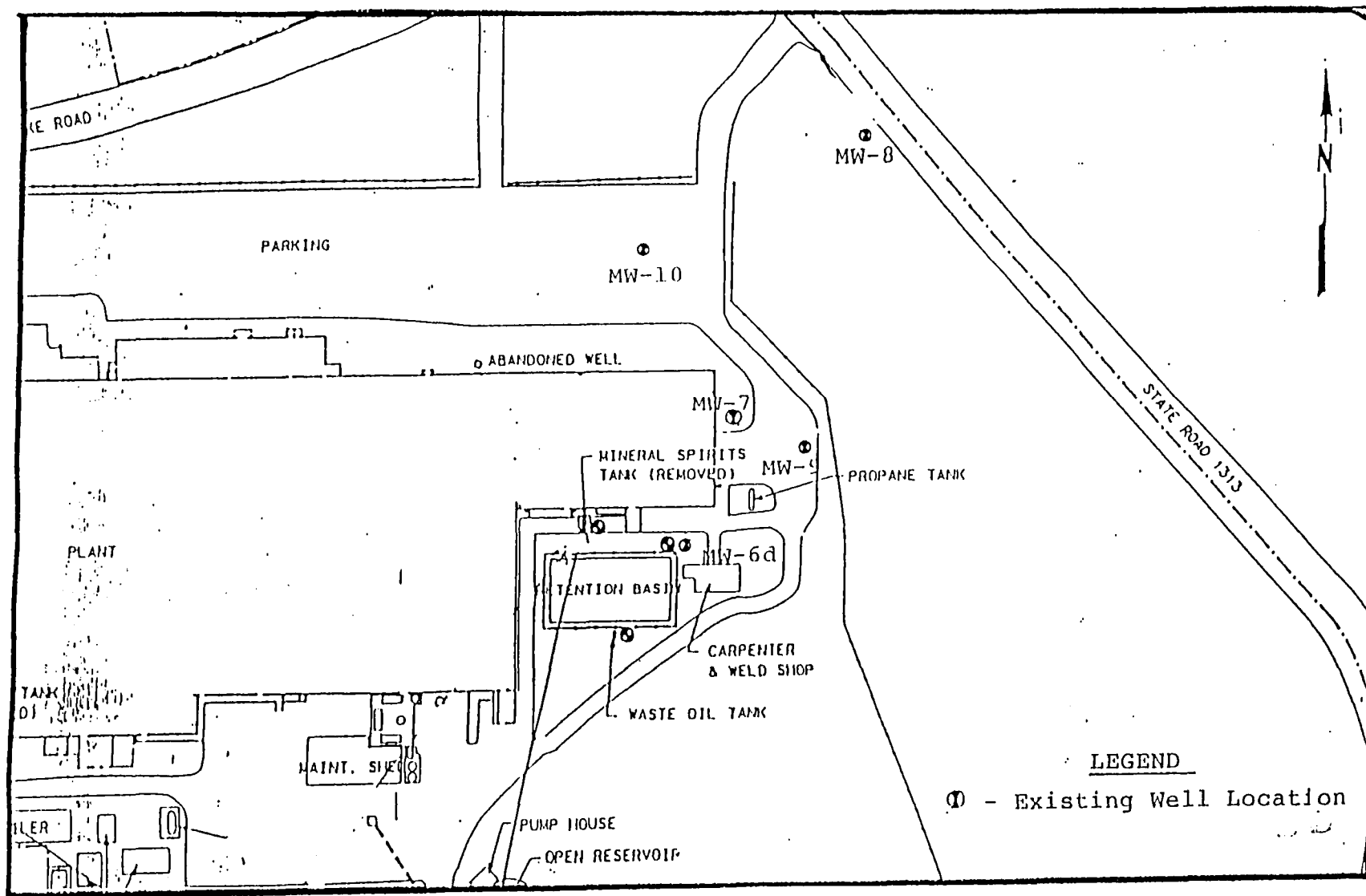


RAEFORD QUADRANGLE  
NORTH CAROLINA  
7.5 MINUTE SERIES (TOPOGRAPHIC) per City



AQUATERRA, INC.  
RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

Author	Drawing	Layers	Date	Title
HMT				Site Location
Job No.	Revision	Figure	Scale	Project
C-467		1	1"=2000'	Burlington Industries Raeford, North Carolina



PROJECT:

Burlington Industries, Inc.  
Raeeford, North Carolina

TITLE:

Well Location Map

JOB:

C467

DRAWING:

---

FIGURE:

SCALE:

1"=200'



AQUATERRA, INC.

RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

## WELL CONSTRUCTION RECORD

MW-9

FOR OFFICE USE ONLY	
Quad. No. _____	Serial No. <u>133596</u>
Lat. _____	Long. _____ Pc _____
Minor Basin _____	
Basin Code _____	
Header Ent. _____	GW-1 Ent. _____

DRILLING CONTRACTOR Carolina Drilling

DRILLER REGISTRATION NUMBER 728

STATE WELL CONSTRUCTION  
PERMIT NUMBER: 46-0064-WM-0060

1. WELL LOCATION: (Show sketch of the location below)

Nearest Town: Raeford, North Carolina  
401 Bypass & State Highway 210

(Road, Community, or Subdivision and Lot No.)

County: Hoke

2. OWNER Burlington Industries, Inc.

ADDRESS Post Office Box 788

Clarksville, VA 23927

City or Town State Zip Code

3. DATE DRILLED 1-15-92 USE OF WELL Monitoring

4. TOTAL DEPTH 25.0 CUTTINGS COLLECTED ☒ Yes ☐ No

5. DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

6. STATIC WATER LEVEL: 12.83 FT. ☐ above TOP OF CASING,  
TOP OF CASING IS 0.0 FT. ABOVE LAND SURFACE.

7. YIELD (gpm): N/A METHOD OF TEST \_\_\_\_\_

8. WATER ZONES (depth): N/A

9. CHLORINATION: Type N/A Amount \_\_\_\_\_

10. CASING:

Depth	Diameter	Wall Thickness or Weight/Ft.	Material
From <u>0.0</u> To <u>10.0</u> Ft.	<u>2"</u>	<u>Sch. 40</u>	<u>PVC</u>
From _____ To _____ Ft.	_____	_____	_____
From _____ To _____ Ft.	_____	_____	_____

11. GROUT:

Depth	Material	Method
From <u>0.0</u> To <u>7.0</u> Ft.	<u>Portland</u>	<u>Pour</u>
From _____ To _____ Ft.	_____	_____

12. SCREEN:

Depth	Diameter	Slot Size	Material
From <u>10.0</u> To <u>20.0</u> Ft.	<u>2</u>	<u>in. 0.010 in.</u>	<u>PVC</u>
From _____ To _____ Ft.	_____	_____	_____
From _____ To _____ Ft.	_____	_____	_____

13. GRAVEL PACK:

Depth	Size	Material
From <u>8.0</u> To <u>25.0</u> Ft.	<u>Torpedo</u>	<u>Sand</u>
From _____ To _____ Ft.	_____	_____

14. REMARKS: Bentonite seal from: 7.0' to 8.0'

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C. WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT

DATE

Submit original to Division of Environmental Management and copy to well

RECEIVED  
JAN 24 1992

GROUNDWATER SECTION  
RALEIGH, NC

If additional space is needed use back of form.

LOCATION SKETCH

(Show direction and distance from at least two State Roads, or other map reference points)

See Attached

RECEIVED  
JAN 30 1992  
ENV. MANAGEMENT  
FAYETTEVILLE REG. OFFICE



# STANDARD SUB-GRADE 2" MONITORING WELL CONSTRUCTION SCHEMATIC

WELL NUMBER: MW-9 DRILLING METHOD: Hollow Stem Auger  
 DATE STARTED: 1-15-92 DRILLING FLUIDS: None  
 DATE FINISHED: 1-15-92 STATIC WATER LEVEL: \_\_\_\_\_ DATE: \_\_\_\_\_  
 GEOLOGIST/ENG: Scott Ball OBSERVED BY: George Bridger  
 REMARKS: Total Depth (TD) Well Boring = 25.0'; TD Wellpoint = 20.2'  
Wellpoint Length = 0.2'

O.D. OF BOREHOLE: 8"  
 O.D. OF CASING: 2.375"

PIPE STICKUP: 0.0'

SURFACE ELEVATION: --

GROUT TYPE: Portland #1

CASING TYPE: PVC Sch. 40

CASING SIZE: 2"

DEPTH TO BOTTOM

OF CASING 10.0'

DEPTH TO TOP OF BENTONITE 7.0'

DEPTH TO TOP OF GRAVEL 8.0'

DEPTH TO TOP OF SCREEN 10.0'

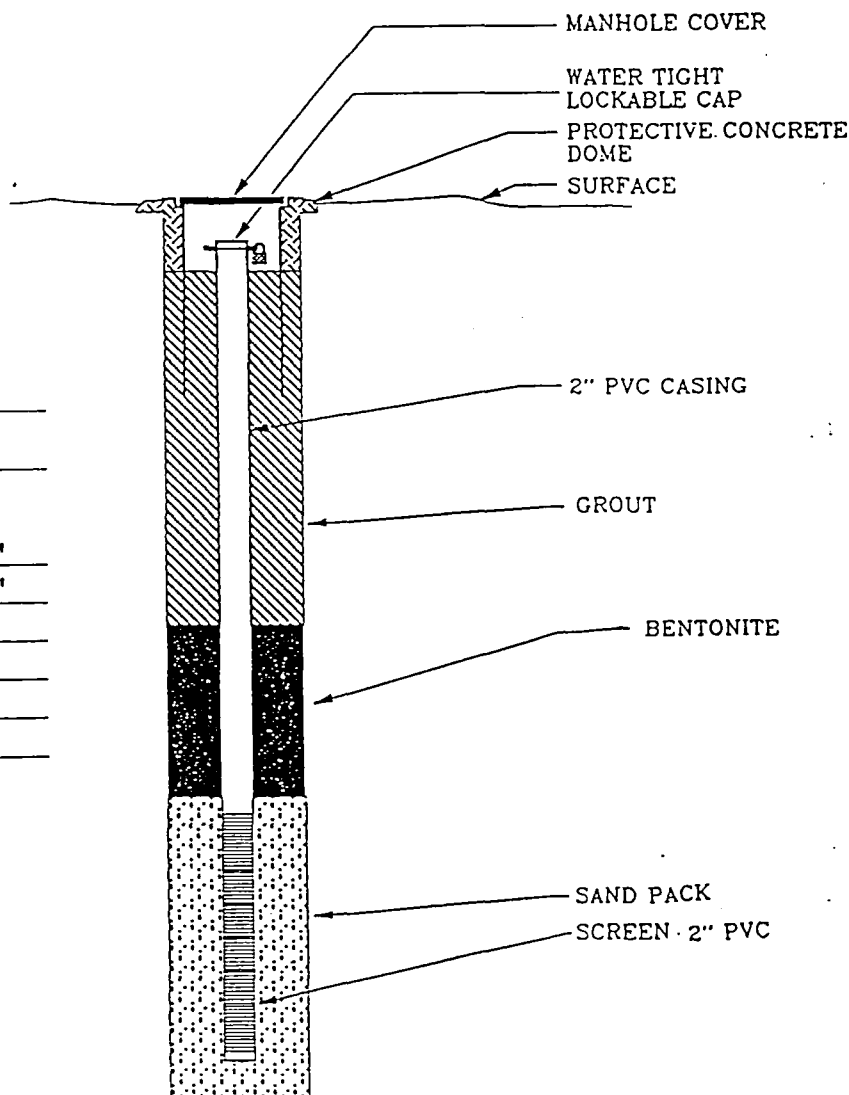
DEPTH TO BOTTOM OF SCREEN 20.0'

LENGTH OF SCREEN: 10.0'

SCREEN OPENING SIZE: 0.010"

SCREEN TYPE: PVC Sch. 40

SCREEN SIZE: 2"; Slotted



PROJECT:  
 Burlington Industries, Inc  
 Raeford, North Carolina

TITLE:  
 MW-9 Well Schematic  
 JOB: C467  
 DRAWING: --  
 FIGURE: --  
 SCALE: 1' - 1'



AQUATERRA, INC.  
 RALEIGH, GREENSBORO, CHARLOTTE  
 NORTH CAROLINA



AQUATERRA, INC.

MW-9

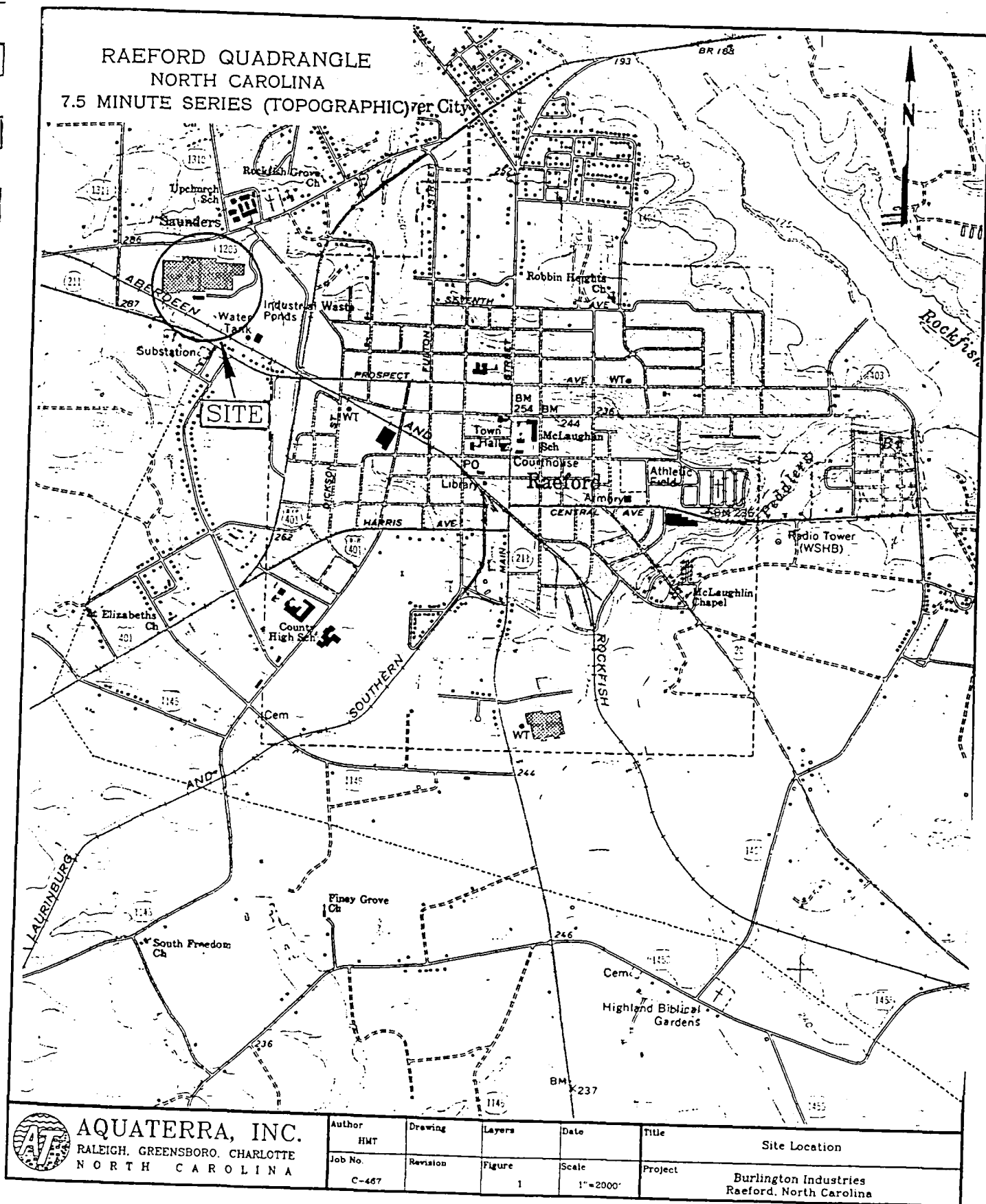
## Subsurface Drill Log

Depth (Feet)	SOIL/MATERIAL DESCRIPTION _____	SAMPLES	OVA Results (ppm)		Remarks
			SPT. SPOON	CUTTINGS	
	Grass, grass roots and topsoil				
	Brick red sandy, silty CLAY (ML)		BDL		Spoon: 3.5'-5.0' Blows: 3-4-6 No solvent odor
5	Light brown to dark brown silty CLAY (ML)		BDL		Spoon: 8.5'-10.0' Blows: 4-8-5 No solvent odor
10					
	Light tan, light gray, and pink sandy CLAY (ML)		0.5		Spoon: 13.5'-15.0' Blows: 3-6-7 No solvent odor
15					
20					
	Yellow sandy CLAY (ML)				
25	Boring terminated @ 25.0' below grade in yellow sandy CLAY (ML)				
	BDL-Below OVA detection limit of 0.01 ppm total volatilized organic compounds				

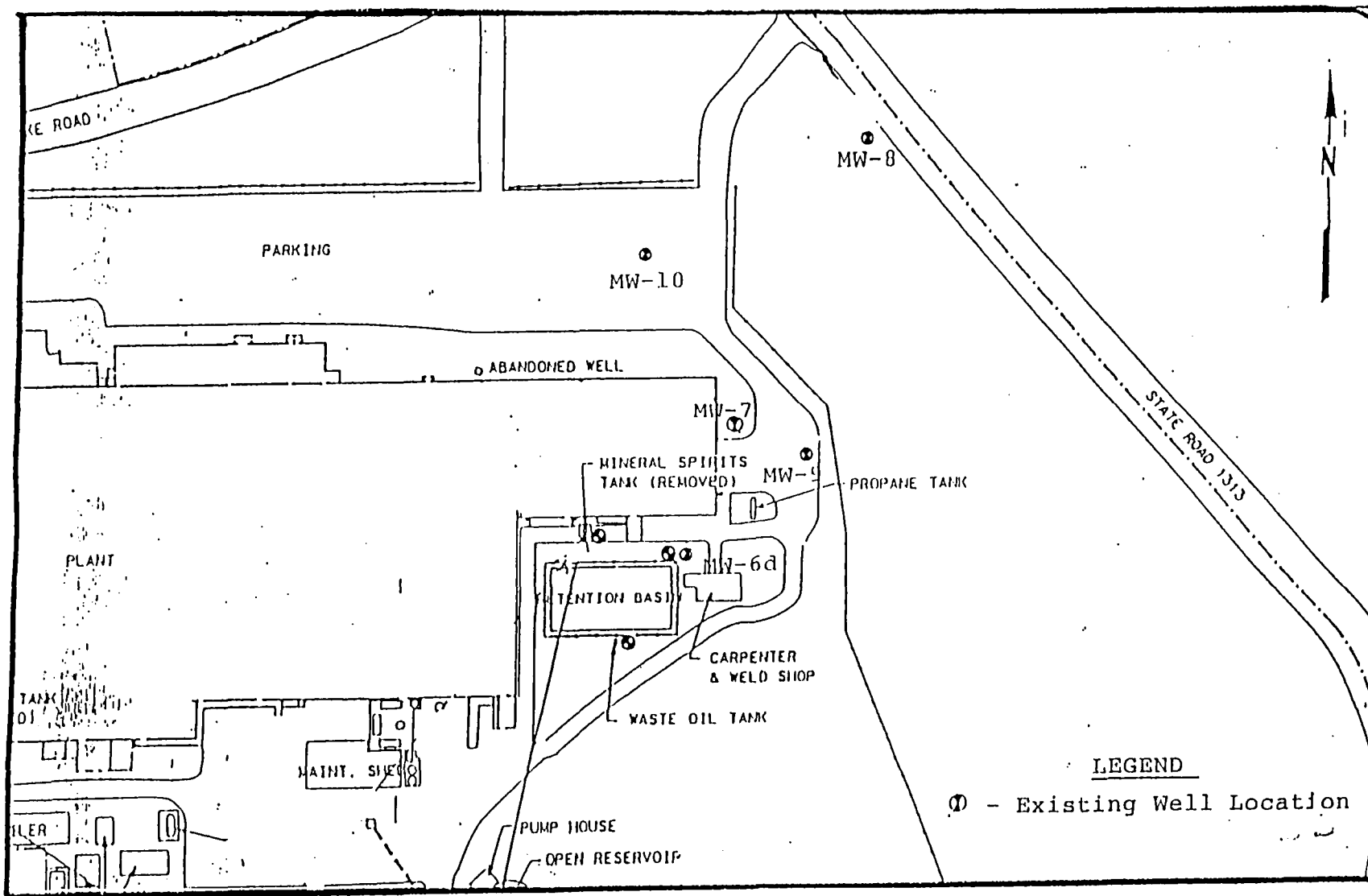
Drilling &amp; Sampling Meets ASTM D-1586 &amp; ASTM D-1587

Supervisor Scott BallRig Type Hollow Stem AugerWeather Sunny; 35°FPage 1 of 1Location BI - Raeford, North CarolinaDate Drilled 1-15-92Job Number C467

RAEFORD QUADRANGLE  
NORTH CAROLINA  
7.5 MINUTE SERIES (TOPOGRAPHIC) per City







PROJECT:

Burlington Industries, Inc.  
Raeford, North Carolina

TITLE:

Well Location Map

JOB:  
C467

DRAWING:  
---

FIGURE:

SCALE:  
1"=200'



**AQUATERRA, INC.**

RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

FOR OFFICE USE ONLY

Quad. No. \_\_\_\_\_ Serial No. 133595  
Lat. \_\_\_\_\_ Long. \_\_\_\_\_ Pc \_\_\_\_\_  
Minor Basin \_\_\_\_\_  
Basin Code \_\_\_\_\_  
Header Ent. \_\_\_\_\_ GW-1 Ent. \_\_\_\_\_

## WELL CONSTRUCTION RECORD

MW-10

DRILLING CONTRACTOR Carolina Drilling

DRILLER REGISTRATION NUMBER 728

STATE WELL CONSTRUCTION

PERMIT NUMBER: 46-0064-WM-0060

1. WELL LOCATION: (Show sketch of the location below)

Nearest Town: Raeford, North Carolina  
401 Bypass & State Highway 210

(Road, Community, or Subdivision and Lot No.)

2. OWNER Burlington Industries, Inc.

ADDRESS Post Office Box 788

Clarksville, VA 23927

City or Town State Zip Code

3. DATE DRILLED 1-14-92 USE OF WELL Monitoring

4. TOTAL DEPTH 25.0 CUTTINGS COLLECTED ☒ Yes ☐ No

5. DOES WELL REPLACE EXISTING WELL? ☐ Yes ☒ No

6. STATIC WATER LEVEL: 11.28 FT. ☐ above TOP OF CASING.  
TOP OF CASING IS 0.0 FT. ☒ below ABOVE LAND SURFACE.

7. YIELD (gpm): N/A METHOD OF TEST \_\_\_\_\_

8. WATER ZONES (depth): N/A

9. CHLORINATION: Type N/A Amount \_\_\_\_\_

10. CASING:

Depth	Diameter	Wall Thickness or Weight/Ft.	Material
From <u>0.0</u> To <u>10.0</u> Ft.	<u>2"</u>	<u>Sch. 40</u>	<u>PVC</u>
From _____ To _____ Ft.	_____	_____	_____
From _____ To _____ Ft.	_____	_____	_____

11. GROUT:

Depth	Material	Method
From <u>0.0</u> To <u>7.0</u> Ft.	<u>Portland</u>	<u>Pour</u>
From _____ To _____ Ft.	_____	_____

12. SCREEN:

Depth	Diameter	Slot Size	Material
From <u>10.0</u> To <u>20.0</u> Ft.	<u>2</u> in.	<u>0.010</u> in.	<u>PVC</u>
From _____ To _____ Ft.	_____ in.	_____ in.	_____
From _____ To _____ Ft.	_____ in.	_____ in.	_____

13. GRAVEL PACK:

Depth	Size	Material
From <u>8.0</u> To <u>25.0</u> Ft.	<u>Torpedo</u>	<u>Sand</u>
From _____ To _____ Ft.	_____	_____

14. REMARKS: Bentonite seal from: 7.0' to 8.0'

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15 NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT

DATE

County: Hoke

Depth From \_\_\_\_\_ To \_\_\_\_\_  
DRILLING LOG  
Formation Description

See Attached

RECEIVED  
JAN 24 1992

GROUNDWATER SECTION  
RALEIGH, NC

If additional space is needed use back of form.

LOCATION SKETCH

(Show direction and distance from at least two State Roads, or other map reference points)

See Attached

RECEIVED  
JAN 30 1992  
ENV. MANAGEMENT  
FAYETTEVILLE REG. OFFICE

# STANDARD SUB-GRADE 2" MONITORING WELL CONSTRUCTION SCHEMATIC

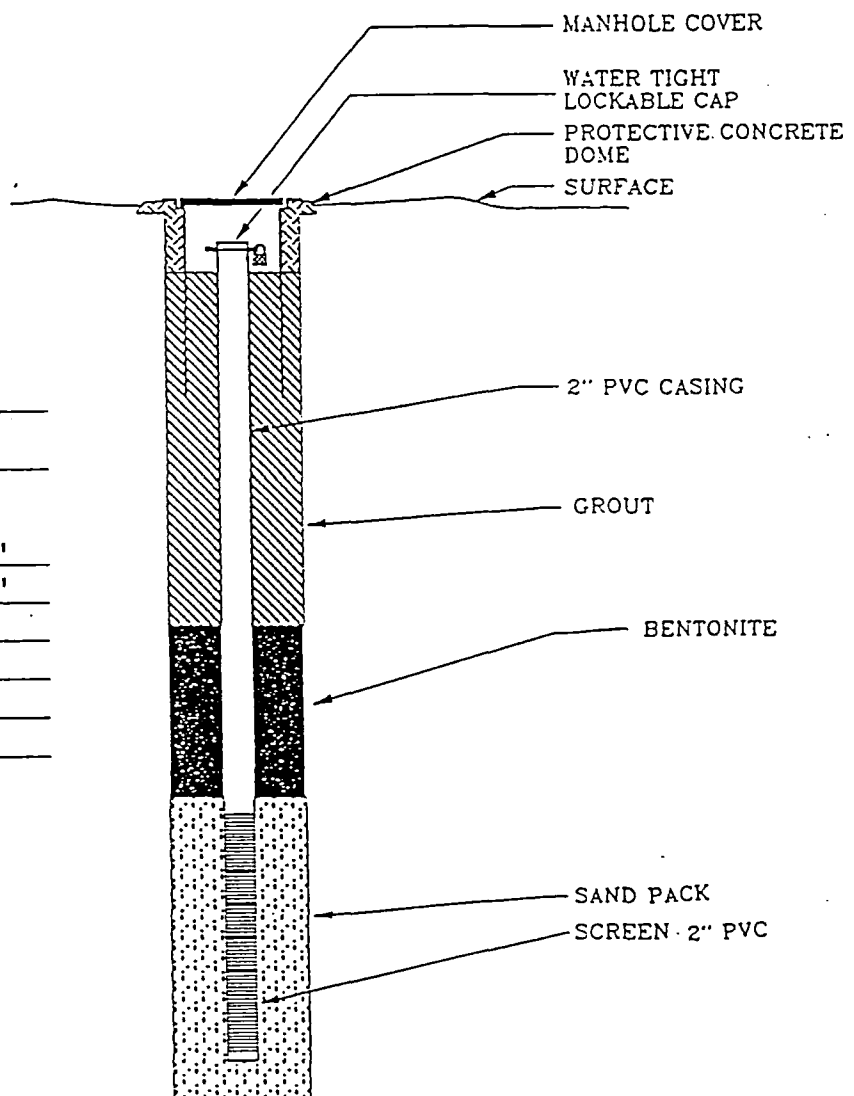
WELL NUMBER: MW-10 DRILLING METHOD: Hollow Stem Auger  
 DATE STARTED: 1-14-92 DRILLING FLUIDS: None  
 DATE FINISHED: 1-14-92 STATIC WATER LEVEL: \_\_\_\_\_ DATE: \_\_\_\_\_  
 GEOLOGIST/ENG: Scott Ball OBSERVED BY: George Bridger  
 REMARKS: Total Depth (TD) Well Boring = 25.0'; TD Wellpoint = 20.20'  
Wellpoint Length = 0.20'


O.D. OF BOREHOLE: 8"  
 O.D. OF CASING: 2.375"

PIPE STICKUP: 0.0'  
 SURFACE ELEVATION: --  
 GROUT TYPE: Portland #1  
 CASING TYPE: PVC Sch. 40  
 CASING SIZE: 2"  
 DEPTH TO BOTTOM  
 OF CASING 10.0'

DEPTH TO TOP OF BENTONITE 7.0'  
 DEPTH TO TOP OF GRAVEL 8.0'

DEPTH TO TOP OF SCREEN 10.0'  
 DEPTH TO BOTTOM OF SCREEN 20.0'  
 LENGTH OF SCREEN: 10.0'  
 SCREEN OPENING SIZE: 0.010"  
 SCREEN TYPE: PVC Sch. 40  
 SCREEN SIZE: 2"; Slotted



PROJECT:		TITLE:		 <b>AQUATERRA, INC.</b> RALEIGH, GREENSBORO, CHARLOTTE NORTH CAROLINA	
Burlington Industries, Inc Raeford, North Carolina		MW-10 Well Schematic			
JOB:	DRAWING:	FIGURE:	SCALE:		
C467	--	--	1" = 1'		





AQUATERRA, INC.

MW-10

# Subsurface Drill Log

Depth (Feet)	SOIL/MATERIAL DESCRIPTION _____	SAMPLES	OVA Results (ppm)		Remarks
			SPT. SPOON	CUTTINGS	
	Asphalt and composite stone				
5	Tan to dark brown sandy CLAY (ML)		BDL		Spoon: 3.5'-5.0' Blows: 1-3-3 No solvent odor
10	Tan and pink sandy CLAY (ML)		BDL		Spoon: 8.5'-10.0' Blows: 4-6-7 No solvent odor
15					
20	Light to medium gray sandy CLAY (ML)		BDL		Spoon: 13.5'-15.0' Blows: 4-4-6 No solvent odor
25	Boring terminated @ 25.0' below grade in light to medium gray sandy CLAY (ML)				
BDL-Below OVA detection limit of 0.01 ppm total volatilized organic compounds					

Drilling & Sampling Meets ASTM D-1586 & ASTM D-1587

Page 1 of 1

Supervisor Scott Ball

Location BI - Raeford, North Carolina

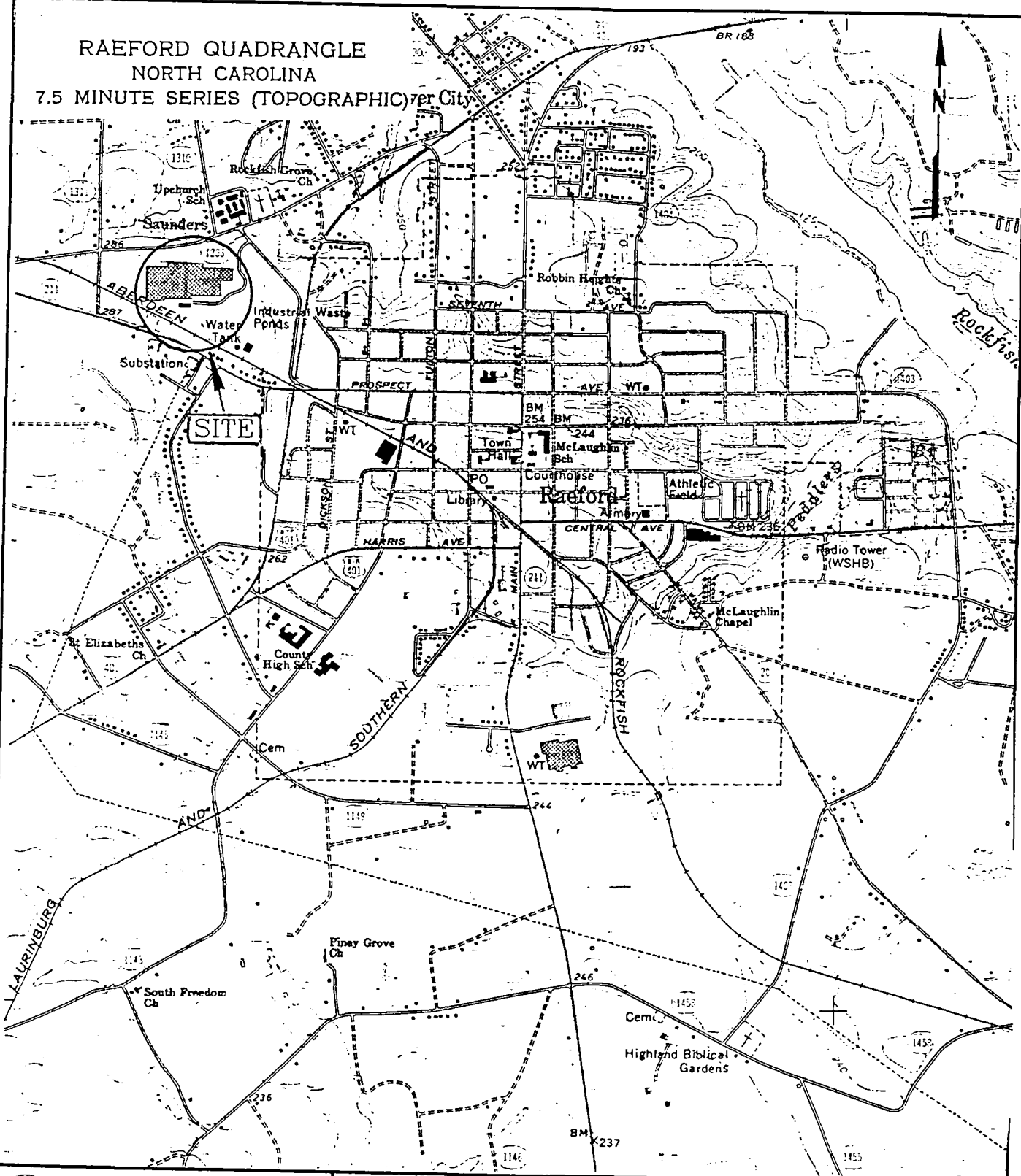
Rig Type Hollow Stem Auger

Date Drilled 1-14-92

Weather Sunny; 35°F

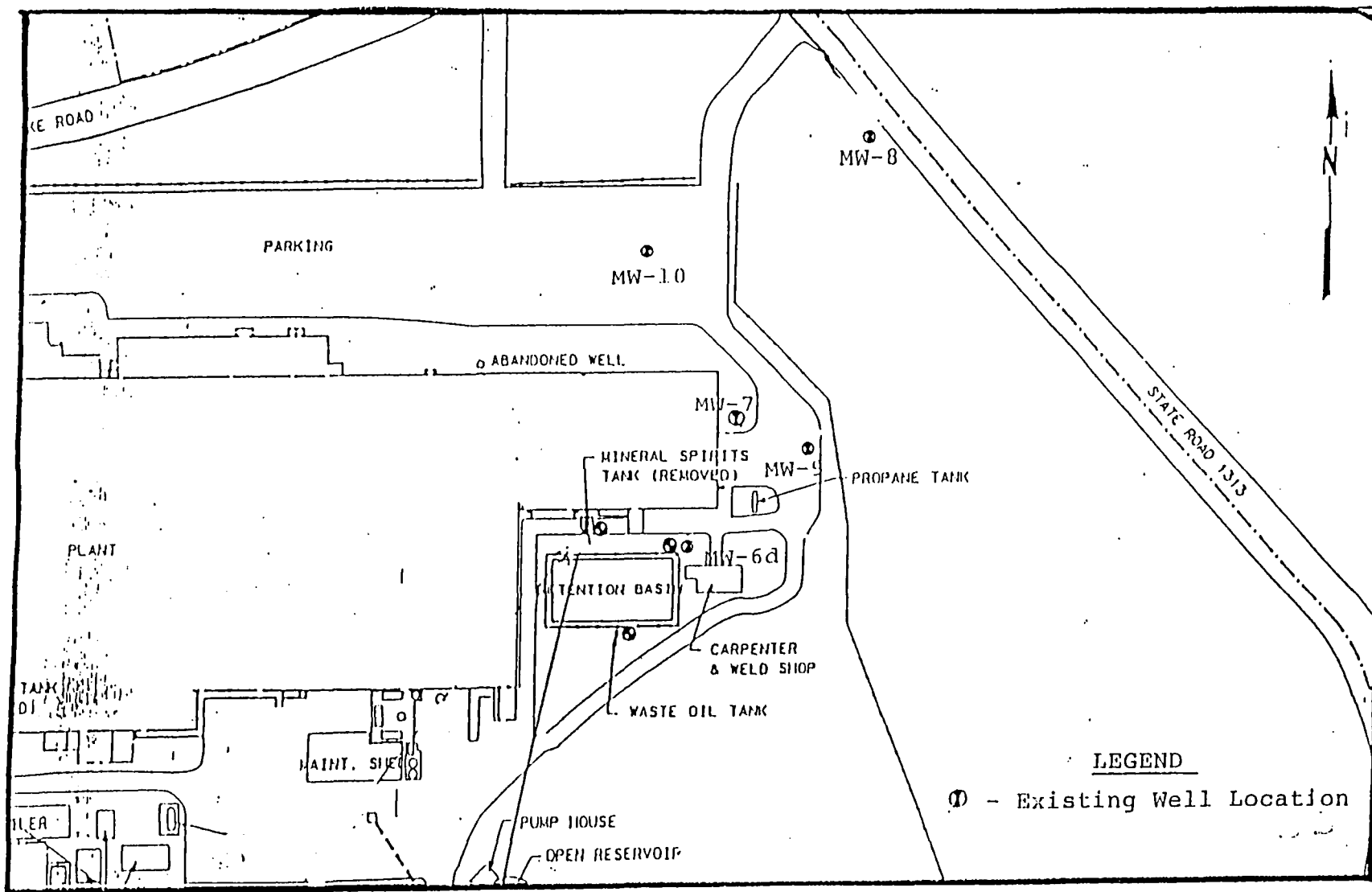
Job Number C467

RAEFORD QUADRANGLE  
NORTH CAROLINA  
7.5 MINUTE SERIES (TOPOGRAPHIC) per City



AQUATERRA, INC.  
RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA

Author	Drawing	Layers	Date	Title
HMT				Site Location
Job No.	Revision	Figure	Scale	Project
C-467		1	1" = 2000'	Burlington Industries Raeford, North Carolina



LEGEND

⊙ - Existing Well Location

PROJECT:

Burlington Industries, Inc.  
Raeferd, North Carolina

TITLE:

Well Location Map

JOB:  
C467

DRAWING:  
---

FIGURE:

SCALE:  
1"=200'



**AQUATERRA, INC.**  
RALEIGH, GREENSBORO, CHARLOTTE  
NORTH CAROLINA